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PAPER TRADE JOURNAL

Vol. XCVII AUGUST 10, 1933 No. 6

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PAPER TRADE JOURNAL

ESTABLISHED 1872

SIXTY-SECOND YEAR

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

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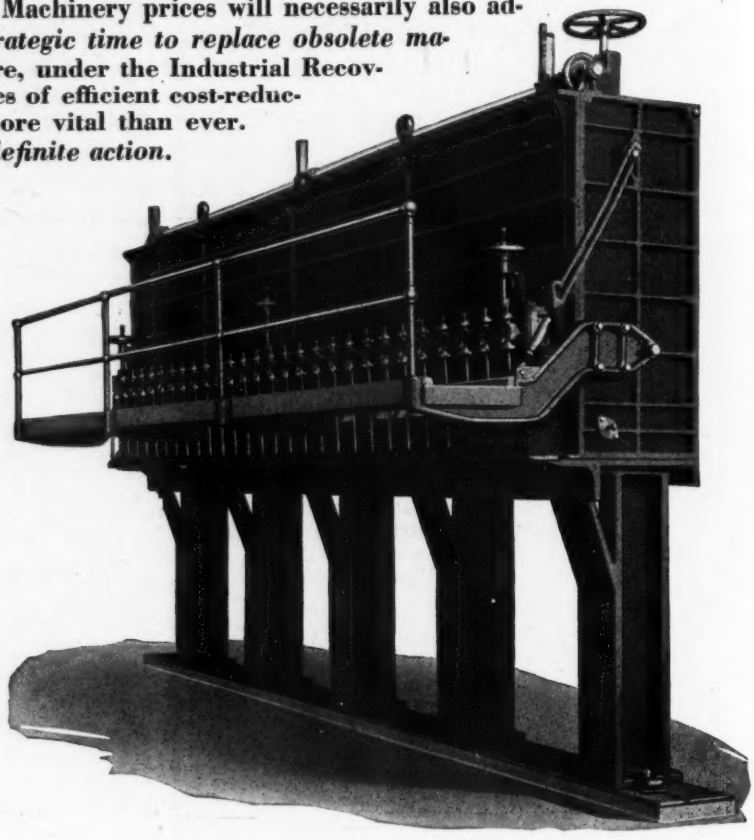
Mr. Paper Mill Executive:

YOU have been keeping your purse strings pretty tight during the past several years. And your reasons have, no doubt, been good ones.

But now the picture is changed. A new set of conditions has arisen. Business is noticeably on the upgrade. Prices of labor and materials are advancing. Machinery prices will necessarily also advance. *Now is the strategic time to replace obsolete machinery.* Furthermore, under the Industrial Recovery Act, the advantages of efficient cost-reducing equipment are more vital than ever. Now is the time for *definite action.*



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PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. XCVII, No. 6 — Thursday, August 10, 1933

Hearings Start at Washington on Paper Codes

Wall Paper Concluded Tuesday and Code Will Be Presented to President Next Week—Newsprint Manufacturers File Shortened Amended Code—Paper Industry, It Is Understood, Will Submit Shortened Revised Code and Ask to Insert Hours of Labor and Wages in General Presidential Agreement to Become Effective at Once

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 9, 1933.—The Wall Paper hearing was concluded Tuesday afternoon and it is expected that the Code will be ready for presentation to the President next week.

The Association of Newsprint Manufacturers has filed a shortened amended code.

It is understood that the paper industry will submit in a day or so a shortened revised code and that it also will request permission to insert the hours of labor and wages in the General Presidential Agreement so that new wages and hours of labor can become effective at once.

Hearings on Wall Paper Code

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 8, 1933—Hearings on the Code of Fair Competition for the $27,000,000 wall paper industry were opened Monday by Deputy Administrator R. B. Paddock in the new House Office Building caucus room.

Albert R. Palmer, member of the American Wallpaper Manufacturers Advisory Committee elected May 16, presented the code prepared by this committee.

The labor provisions of the Code call for a minimum rate of 30 cents an hour or $12 per week for employees in the industry, and that no person under 16 years of age shall be employed after the effective date of the Code.

Upon questioning by Deputy Administrator Paddock, Mr. Palmer said that he had no estimate of the number of persons who would be put back to work under this wage rate. He declared that since the hours provision of the proposed Code called for a maximum of 40 hours per week, and the present average running time in the industry is 50 hours per week, theoretically the 30 cent rate would call for an increase of approximately one-fifth of the present number of employees. Practically, however, he said that he doubted this. The number of employees in factories in 1932 was estimated by the Advisory Committee to be 4,036 compared with 5,495 in 1930 and 5,135 in 1928.

In suggesting that Section 7 of the Code dealing with the wage rate be amended so as to strike out the provision protecting maintenance of present wage differentials for factory employees, Mr. Palmer stated that this would work "undue hardship" on several employers. He said that the committee would leave to the President ways and means of taking care of the rates in the intermediate wage schedule.

The Code, among other things, contains articles setting rigid commercial standards for products of the industry, prohibition of new machines from June 1, 1933 to June 1, 1935; certificates of necessity for establishment of new factories prior to June 1, 1935; prohibition of sale of commodities below cost; establishment of a uniform cost accounting system, uniform credit granting terms and restrictions upon freight allowances, and other rules of fair practices for the industry. A coordinator of the industry to report to the President is also provided for in section 20 of the proposed code.

Witnesses Present

Witnesses were the following:

Representing the National Wallpaper Wholesalers Association: Richard E. Thibaut, Jr., W. H. Remien, Joseph A. Segumi, Ralph A. White, Vernon H. Hodges, Justin P. Allman.

A. C. Hart, Interior Paper and Color Corp.; Robert Wilson, Pres., Thomas Stroham Co.; Rudolph Hemil, Treas., Wallpaper Crafts of U. S.; Carl R. Latham, attorney, representing Star Peerless Wallpaper Mills and the Century Wallpaper Mills and W. A. Huppuch; Albert G. Barnes, Manager, Barnes Wallpaper Co.

Representing Labor: A. F. Jamison, American Federation of Labor; Boris B. Shishikin, American Federation of Labor; A. F. Jamison, president of the Wallpaper Mill Helpers Local, No. 18255 Union and Johnson Rose.

Machinery Limitation Would Work Injustice

Carl Latham representing the Star Peerless Wallpaper Mills and the Century Wallpaper Mills, presented a brief objecting to various provisions of the proposed Code. His objection centered around the machine limitation section and the provision dealing with a coordinator for the industry. He stated that his group of mills preferred a supervisory committee of five to regulate affairs of the industry under the code. Limitation of machine installation would work a grave injustice upon small mills and prevent newcomers into the industry, he declared.

Questioned by Deputy Administrator Paddock, he said that if discretion were lodged with the administrator to

(Continued on page 26)

Paper Manufacturers Support Recovery Act

All Divisions of Paper Industry Are Complying With President's Wishes by Increasing Wages and Shortening Working Hours—West Virginia Pulp & Paper Co. to Inaugurate 25 Per Cent Advance Upon Adoption of Forty Hour Week

In conformity with the National Industrial Recovery Act, dispatches from practically all divisions of the paper industry continue to pour in. In addition to those reported in previous issues of the PAPER TRADE JOURNAL, announcements of wage increases and reduced hours, to comply with the President's wishes, have been made by many more representative paper manufacturers, including the following:

West Virginia Pulp & Paper Co.

Announcement was made last week by the West Virginia Pulp and Paper Company, Mechanicville, N. Y., of the placing in effect of a ten per cent wage increase which will be increased to 25 per cent late this month when a forty hour week is to be adopted. An increased volume of orders started several weeks ago which necessitated the recall of many workers and near capacity operations are now being observed.

National Paper Products Co.

A new schedule calling for a 36 hour week has been adopted by the National Paper Products Company, Carthage, N. Y., and wages are also to be increased. An extra shift is to be employed as a result of shortening the working week and from now on four shifts of six hours each will be in effect. An increase in the working force has also been made.

Riegel Paper Corp.

Fully three weeks before the recent blanket code for all industry was inaugurated, the Riegel Paper Corporation decided it should take an individual stand in promptly complying with the spirit of the N.I.R.A. Wages were raised 17 per cent and the working week shortened from 48 to 40 hours.

The latter move involved the additional employment of 106 men. Through the last three years the four Riegel Mills in New Jersey have run at a very satisfactory pace. The shortened week was therefore accomplished by staggering eight hour shifts from Monday morning to the following Sunday.

The Riegel Paper Corporation made a most interesting announcement recently in connection with the 230 lines which it manufactures. According to this statement, despite lowered prices during the depression, there is not a single paper in which their quality today is not superior or equal to three years ago.

Tarentum Paper Mills

John R. Diggs, secretary of the Kraft Paper Institute, has been advised by R. B. Livermore, general manager of the Tarentum Paper Mills, Tarentum, Pa., that, beginning July 31, they changed their mill from a twelve-hour shift to an eight-hour shift, which increased the number of their employees approximately twenty-five per cent and resulted in approximately fifty per cent increase in their pay roll. In changing the number of hours Tarentum also changed the rates of pay so that workers would receive as much for eight hours as they did for the twelve, and in addition granted a five per cent advance. They also increased rates of their day workers running from fourteen to thirty per cent.

The notice, signed by Charles T. Dole, president of the concern, said in part:

"This advance is made in accordance with the wishes of the President of the United States and in the spirit of the national recovery act, although present earnings do not justify any increase in costs. We therefore ask each man to do his best to make this great experiment a success."

Consolidated Water Power & Paper Co.

Mills of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., have been operating at full capacity since January 1 this year, a general increase in business being noted since last September, according to George W. Mead, president. A year ago at this time the mills were operating at 65 per cent of capacity.

The Consolidated mills have been operating on schedules called for in the federal code for about a year. The company adopted the six-hour shift for men in the mills a year ago and at the same time adopted the eight-hour day and five-day week for day laborers. One-third more mill workers and one-sixth more day laborers were added. Similar schedules for the Interlake division at Appleton were adopted about a month ago.

Mr. Mead expressed his belief that the national industrial recovery program will succeed because the Administration has coupled stimulus with a national business increase which started last fall. He is of the opinion that the lowest depths of the depression had been reached late last fall and that increases in business activity started at that time. Business itself has started upward and the Government's drive would bring about a more rapid return to normalcy. Mr. Mead is a member of Governor A. G. Schmedeman's advisory committee on industrial codes in Wisconsin.

Rhinelander Paper Co.

The Rhinelander Paper Company, Rhinelander, Wis., was added to the list last week of mills that have complied with the new government setup. The company announced that its 400 employees have been placed on a 40-hour week basis, at the same pay they have been receiving for 48 hours.

Champion International

Notices were posted in the plant of the Champion International Paper Mill at Lawrence, Mass., last week, announcing an increase of 10 per cent in the wages of 400 employees.

Robert Gair Co.

Jobs will be made for 250 additional workers in the mills and factories of the Robert Gair Company, Inc., and its subsidiaries, manufacturers of paperboard and paperboard products, as a result of the company's acceptance of President Roosevelt's blanket code, it has been announced by E. Victor Donaldson, president. The Robert Gair Company, Inc., sent the following telegram to the Summer White House at Hyde Park:

"It is a pleasure to enlist the general office and nine plants of Robert Gair Company, Inc., and its subsidiaries in your program for economic rehabilitation and to advise you that we have this day signed the blanket agreement provided

under the National Recovery Act extending its benefits to our two thousand and fifty employees. During the past forty-five days this company has added one hundred and fifty workers and under the new hours of labor expects to add two hundred and fifty more."

Robert Gair Company, Inc.
Bogota Paper and Board Corporation
Syracuse Container Corporation

The Gair Company and its subsidiaries operate paperboard mills and fabricating plants in New York, New Jersey, Connecticut, Massachusetts and Rhode Island.

Pacific Coast Paper Mills

Pacific Coast Paper Mills at Bellingham, Wash., manufacturers of M-D tissue, has just made a 25 per cent increase in its wage-scale to employees because of growing business. Further the company is running its mills on four six-hour shifts with eight-hour pay basis.

Their desire to comply with President Roosevelt's recovery program, to spread work and increase pay, was the major influence in these steps, officials of the company reported. Introduced into the Seattle territory little more than a year ago, the Pacific Coast Paper Mill's products found instant response from consumers and similar results followed when the Portland, Ore., area was cultivated.

Representatives of the company are introducing their line of paper items into the California territory at this time with encouraging results to date.

Hawley Pulp & Paper Co.

Announcement was made at Oregon City, Ore., that wages of the employees of Hawley Pulp and Paper Company plant will be increased within a reasonable length of time.

The amount of the increases and the date they become effective will depend materially on the future selling price of the products, especially news print, according to John V. Smith, vice-president of the company.

Crown-Willamette Paper Co.

The West Linn, Ore., mill officials of the Crown-Williamette Paper Company have been notified by the executive committee of the Crown-Zellerbach Corporation that effective August 1, the scale of wages and salaries in effect at the mill just prior to December 31, 1932, will be restored. The minimum wage rate will be increased to 40 cents an hour.

The executive committee has written West Linn officials that "It is the management's desire to co-operate as fully as possible with the administration's recovery program, further to increase employment and increase the purchasing power of its employees."

Container Corp.

Officials of the Container Corporation, at Anderson, Ind., operating the plant formerly operated by the United Paperboard, have announced that shorter hours will begin immediately and more men employed. Shifts will be shortened by about two hours, it was stated.

Racquette River Co. Repairs Dam

POTSDAM, N. Y., August 7, 1933.—Extensive improvements are under way at the dam owned by the Racquette River Pulp and Paper Company, at Hewittville. Repairs are being made now in order to take advantage of the unusual low level of water in the river. The dam was built about seventy years ago and supplies water for the generators at the Unionville mill. Its condition has been such as to render it unable to serve this purpose effectively for the past year.

Indiana Paper Men Conform to Code

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., August 7, 1933.—Most of the activity in the paper trade of this area during the past week was in rearranging schedules and payrolls to conform to the blanket code. In the jobbing trade this was not such a problem, but among the mills there was a scurrying around of no mean proportions. Virtually every mill had to put on extra help to shorten hours, for most of them are operating either at or near capacity. There were cases, however, where the adoption of the blanket code had been anticipated and wages increased and hours shortened before it went into effect. The minimum wage situation in the mills meant but little except in some instances where female help in the smaller cities was receiving less than the minimum. In the wholesale trade it is not likely that a lot of new help will be employed. The general rule appears to be to cut hours for the entire establishment. Here, again, the minimum wage will cause slight change in Indiana.

Perhaps the most joyous branch of the trade now is the paper stock division. Prices continue to improve and the question now, instead of being where to store stock, where to get it. The local houses are competing for supplies in no inactive manner. Procurers of waste have sprung over night.

Demand for fine paper seems to be improving and the jobbers are more encouraged than they have been for some time. It is known that a number of direct mail advertising campaigns are being planned for the fall season. Much of this campaigning will be new business, for since the increase in postal rates there has been little of this advertising done. With the reduction for intra-city postage, advertisers are coming back to the fold.

With increasing business, demand for wrapping and bags also shows a gain. Users seem to feel further price rises are in the offing.

Summer specialties naturally are going strong, due to very hot weather during the last week.

Boston Paper Market Fairly Active

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., August 7, 1933.—In the wholesale paper market here, there was a fair amount of activity the last week, some concerns reporting no lull and others that the demand became a bit slower. Conditions have changed, so that it is now a sellers' market instead of a buyers'. Purchasers "have got to stop chiseling now" and sellers get the prices asked.

One well known firm noted a substantial increase in orders for fine paper over July of last year and that indications presage a larger volume of sales for August than in the corresponding month of 1932. The last week showed a good uplift for this house, which did a sizable tonnage business during the week. Fine writing papers moved fairly well from at least one prominent manufacturer. The demand for parchment papers continued.

Wrapping paper was sold in moderate quantities. Summer specialties moved in satisfactory amounts. The box board market was steady. Although some mills have caught up on their orders, others are still considerably behind in filling them. The trade generally expects further advances in values.

The demand for paper stock was steady, with the call for mixed papers and old newspapers very active, and an advancing price tendency. A good fall business in paper stock is anticipated. No. 1 books, heavy, have risen to 1.10 @ 1.15, compared with a former range of 1.00 @ 1.10. Roofing stock registered declines in the No. 1, No. 2 and No. 3 grades.

Wisconsin Paper Mill Operations Expanding

Many Leading Manufacturers Report Capacity Production—Companies Sustaining Heavy Losses During Depression Now Making Profits—Nekoosa-Edwards Paper Co., of Port Edwards, From Thirty to Forty Days Behind Orders—Prices Continue to Advance

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., August 7, 1933.—Production in Wisconsin mills is reaching the largest volume since 1929, with many of the largest concerns reporting capacity operations. Some are falling behind on orders and are unable to make deliveries under thirty days. Advances in prices have been made in many lines, but some manufacturers are hesitant at making increases lest it might slow up demand.

The situation is more encouraging than at any time since the depression started, because mills sustaining heavy losses in order to keep operating are now reporting profits, partly due to improved prices and partly to a restoration of volume.

J. E. Alexander, vice-president and general manager of the Nekoosa-Edwards Paper Company, Port Edwards, Wis., states: "Our mills at Nekoosa and Port Edwards are operating at full capacity and still we are thirty to forty days behind our orders. The mills have been on full time schedules for probably sixty days.

"Prices on our grades have been advancing. About thirty days ago we sent out notices of increased prices and it is probable that further advances will come, although we do not know definitely as yet. We will have to have further advances to reconcile the increased production costs under the federal code."

Series of Forest Fires

Wisconsin forest areas which are important pulpwood sources for the mills were threatened with serious timber losses by a series of forest fires last week that were brought under control largely by the fortunate arrival of rain. Timber holdings of the Wausau Paper Mills Company, near Merrill, Wis., were in one of the worst fire zones, and the company had a force of fifty men fighting to save the timber. Some marginal damage was done, but the main timber tracts were saved. Bad fires were raging in the vicinity of Grandfather Falls, where the power dam of the Grandfather Falls Paper Company, of Merrill, is located. Timber in Lincoln county was in greatest danger, with fires over a seven mile front along the Wisconsin river. The fires also were within two miles of Tomahawk, where the Tomahawk Kraft Paper Company is located. Slashings were burning in Ashland, Price, Taylor, Oneida and Iron counties, also. Most of the blame is placed on careless berry pickers in the cutover regions. Hundreds of fire fighters were marshalled by the state and federal conservation departments, and with improved equipment were able to save most of the valuable timber.

Pulpwood Arrives from Canada

The port on Lake Superior at Ashland, Wis., is looked upon as a growing center of pulp and pulpwood shipments. A Port Arthur, Ont., mill is reported to be negotiating for dock facilties and expects to start shipping cargoes by boat this fall. Three Norwegian cargoes are due to arrive late this summer for delivery to inland mills.

The Consolidated Water Power and Paper Company has completed the towing of three large rafts to Ashland from Canada, making a total of 25,000 cords. A trainload a day will be shipped out from the port for the next sixty days for the mills at Wisconsin Rapids, Biron and Appleton, Wis. The timber is all cut in the Province of Ontario near Port Arthur by the Newaygo Timber Company, a subsidiary of the Consolidated, and the harvest this year is about average.

It is reported that the number of rafts scheduled for delivery to Ashland will be doubled next year.

To Repair Tomahawk Power Dam

Orders have been issued by the Wisconsin Public Service Commission to repair the power dam at Tomahawk, Wis., to prevent danger of floods and damage to other dams on the Wisconsin river. The ownership of the dam is in dispute, between the former Tomahawk Pulp and Paper Company and the Tomahawk Hydro-Electric Company. The paper company holds a mortgage in the amount of $200,000 on the property of the electric company. The commission is not attempting to determine ownership of the dam, but has issued the order to whoever owns it.

Reservoir Project Approved

Approval has been given by Governor A. G. Schmedeman to the enabling act which permits the Wisconsin Valley Improvement Company to proceed with the construction of the $5,000,000 reservoir project on the Big and Little Eau Pleine rivers, tributaries of the Wisconsin river. Only one more legal step is necessary, and that is the granting of a permit by the Wisconsin Public Service Commission to the company to issue bonds to finance the work.

The company expects to be able to purchase 80 per cent of the agricultural lands affected, in accordance with the terms of the law, so the other 20 per cent can be condemned, this work to be accomplished so construction can be started this fall. The company thus far has acquired about 20,000 acres out of the 54,000 acres the flowage will cover. It will also be necessary to elevate U. S. Highway 51 for a mile, provide other roads and erect a new railroad bridge at Dancy.

The Big Eau Pleine reservoir will have a flowage of 12,400 acres, and the Little Eau Pleine 45,600 acres. Annual damage to land and crops will be eliminated, and a uniformity of power will allow all mills to operate at a maximum throughout the year. It is believed that operating costs at the mills will be reduced to enable more effective competition with Canadian mills.

An important part of the project is the contemplated construction of a hydro-electric plant at Knowlton, below the mouth of the Little Eau Pleine river by the Consolidated Water Power and Paper Company. This will affect 10,400 acres of land on the Wisconsin river.

Mills which are stockholders in the Wisconsin Valley Improvement Company, and which will be benefited by the improvement, in addition to the Consolidated company are: Nekoosa-Edwards Paper Company, Rhinelander Paper Company, Tomahawk Kraft Paper Company, Grandfather Falls Company, Wausau Paper Mills Company, Marathon Paper Mills Company, Mosinee Paper Mills Company, Wisconsin River Paper and Pulp Company, and Whiting-Plover Paper Company. The Wisconsin Valley Electric Company, and the Wisconsin Power and Light Company also are beneficiaries. Mills will pay tolls annually as a means of taking care of operating expenses.

Chicago Paper Market Shows Unusual Strength

Fine Paper Section Exhibits Stronger Undertone Than of Late—Quotations on Book Papers and Sulphite Bonds Firmer—Demand for Kraft Wrapping Paper Broadening—Various Grades of Paper Board Continue in Satisfactory Request

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., August 7, 1933.—With the code governing the paper industry well on its road to adoption, local merchants are busily engaged in utilizing their business sessions to discuss the provisions of the code and to determine ways and means of carrying them out. Meanwhile local markets are showing unusual strength. Sulphite bonds and book papers are reported to have shown an increase in price following a rapid and continuous firming up.

Krafts are up and strong, demand broadening out each week. Kraft specialties are also sharing in the improvement. Fine papers have had a good week, and mill representatives are showing an unusually high rate of business improvement. The board market continues strong. Waste papers have felt the strengthening all along the line even though dealers are awaiting the national convention next week for final opinions relative to their cooperation with the National Recovery Act.

Plans for Paper Day

Plans are going ahead rapidly for Paper Day, to be held at A Century of Progress in conjunction with the exhibit of the Paper Foundation, according to Phil Howard, managing director. The paper industry will have the cooperation of the State street stores and other merchants throughout the city of Chicago. During that day the merchants will make special displays of paper and paper products—tieing up with the Paper Day program on the lake front which is now in the making.

Meanwhile, interest in the exhibits of the paper industry continues to grow. More than 200,000 have gone through the exhibit and at least 300,000 additional exhibitors are expected as the Fair hits its peak. Paper merchants are coming from all over the world to view the displays. Mexico City, Honolulu, Latvia and Bucharest are listed as the home cities of several visitors, the latter two having read about the paper display and the House of Paper in their local newspapers.

Mr. Howard states that there are yet a few excellent display cabinets available for manufacturers desirous of capitalizing on the increasing interest in the paper exhibit. With the peak yet ahead and with nearly twice as many more visitors expected as have already seen the Exhibit, the bargain prices set on the displays should make them of unusual value to any paper manufacturer or convertor.

Paper Salesmen's Activities

With a turnout of more than fifty members and guests featuring the July golf outing of the Salesmen's Association of the Paper Industry, Chairman Bill Tilden expects even a larger turnout on August 18, when the clan will gather at the Knollwood Club in Lake Forest. Here the big swimming pool, bridle paths and tennis courts will be available and there is a possibility of an outdoor dinner being served in the evening. Salesmen who have missed the previous monthly outings are laying their bets on the Knollwood event.

News of the Trade

A new industry, the Kaplan Envelope Company, of Rockford, is moving to Chicago, according to announcement made by S. H. Kaplan, of that firm. A factory building containing 22,000 square feet of floor space at 2533 North Ashland Avenue, Chicago, has been leased for a number of years and will be ready for occupancy early in August.

The company was incorporated in Rockford two and a half years ago. In that time the business has expanded sufficiently to operate the plant at an average of 96 hours per week and it is now necessary, according to President Kaplan, to purchase additional equipment to handle present volume. The company is engaged in the manufacture and printing of envelopes and paper specialties. Chicago sales offices are being continued at 43 East Ohio street.

A new ship, the *Belvoir*, has been added to the paper conveying fleet of the *Chicago Tribune*. The *Belvoir* will carry news print from the *Tribune* mill at Thorold, Ontario, to the *New York News*. On the westward trip it will call at the *Tribune* timerland ports to take on pulpwood for the paper mill.

May Buy Ron-Noc-O Paper Mill

"Outside interests have been at Dexter," says the *Times* of Watertown, N. Y., "during the past several days examining the plant and properties of the defunct Ron-Noc-O Paper company with a view to purchasing it and starting operation again, it became known today.

"The mill, a small one engaged for a number of years in the manufacture of grease-proof and similar grades of paper, was operated for about two years by the Ron-Noc-O Paper company headed by J. J. O'Connor of New York, until February, when the concern went into bankruptcy.

"Prior to the purchase of the plant by the Ron-Noc-O company, it was owned by the Warren Parchment company, headed by John J. Warren of Brownville. The Warren Parchment company became financially defunct about three years ago and ceased operation of the mill.

"Reports have been in circulation that the Dexter Sulphite Pulp and Paper company planned taking over and using the property, but this was positively denied at the offices of the sulphite company today."

Halifax Paper Co. to Start

A press dispatch from Roanoke Rapids, N. C., states that announcement was made this week by F. M. Brown, who will be president and general manager of the new corporation, that Halifax Paper Company, Inc., will start full operation of the kraft paper mill on Roanoke river, just outside the city limit on August 7. Coupled with this good news is the fact that a flat wage increase of 10 per cent will be instituted over that paid when the mill stopped operation here last December.

A repair crew of some 25 or 30 men are working in full operation putting the mill in shape for its start in little more than a week, and the number of men employed at the plant will be at least 125.

Officers of Halifax Paper Company, Inc., will be composed of F. M. Brown, president and general manager; J. J. Williams, general superintendent, and E. A. Telliga, treasurer. The mill management is thoroughly in accordance with the program of the N. R. A. and will so advise Washington, it was stated.

Philadelphia Paper Market Outlook Bright

Although Fine Paper Section Rules Seasonally Quiet, Volume of Sales Transacted Compares Favorably With Record of Corresponding Period Last Year—Various Grades of Coarse Paper Selling Actively All Along Line, With Prices Quite Firm

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., August 7, 1933.—The first week of August gives that period a splendid record of activities in both divisions of the paper trade—fine and coarse—and the entire stock business particularly. While unfortunately a moiety of this activity concerns itself with association activities under the Code, it was none the less true that compared with a similar period of a year ago, August of 1933 affords not only satisfaction for what is, but encouragement for that which is looked upon as sure to come. The fine paper branch of the business is, of course, seasonably quiet, but therein lies the opportunity of the waste paper dealers, for with a very heavily increased demand on the part of the mills, and at best a meager supply of stock, the advanced prices of recent weeks are steadily and firmly maintained. Coarse papers are selling actively all along the line, and in this branch of the business, advance over a year ago is marked. Prices are firm for all grades.

Paper Trade Association Activities

To Myer Magil, head of the Penn Card and Paper Company, Inc., 410 Race street, there has fallen this week a major share of the Paper Trade Association activities. Through his efforts to secure an agreement among the fine paper houses on the interpretation of the Code as regards the apportionment of a 40-hour week, he reports today that he has on his desk replies from every fine paper house in the city, and that an overwhelming majority of these are favorable to a 40-hour week on a 5-day a week basis, although there is a small but very influential majority which proposes to adhere to a schedule calling for a half day on Saturday. In these cases the employees will be so divided that a number will work from 8 o'clock until 4 and others from 9 until 5 on 5 days of the week with a Saturday half day, however, it is hoped that a 5-day work week can eventually be attained. Mr. Magil said—"Personally I am most thoroughly in favor of a 5-day week. I believe all industry is headed in that direction, and I believe that the paper trade has a splendid opportunity of getting at the head of the procession. However, I realize that we, in the paper trade, are largely dependent on the accomplishment of this result on what the printing industry will do; we had to accommodate them, of course, and to that extent they are factors." Mr. Magil has been in touch with Mr. Chamberlain of the National association and is hopeful of presenting at the meeting of the Philadelphia Paper Trade Association, called for Wednesday of this week, a report which will be as gratifying to it as to himself.

Paper Stock Code Discussed

Meanwhile, in the paper stock industry, Code interpretation is very much at sea. An effort to clarify the situation was made at a meeting held in the Hotel Lorraine during the week, not called under any organization auspices but attended by virtually all the paper stock dealers in this city. As a matter of fact, during the last week or two no less than four organized or self-appointed groups have been importuning the stock men either to join their organizations or to subscribe to suggested Codes. While there was unanimity, of course, among all those present to enter into the detail of the Industrial Code generally, it was decided not to formally agree to any of the proposed Codes until further advices had been received from Washington. Wm. J. McGarrity, Secretary of the Philadelphia Branch of the National Association of Waste Material Dealers, left the city last week for attendance at the sessions in Chicago today, tomorrow, Wednesday and possibly Thursday, of the Waste Paper Institute connected with this association, and upon his return some definite action will be taken.

Problems of Particular Interest

Problems of particular interest to the paper stock dealers are those concerned with the abolition of what all complain is an evil—direct and centralized buying by the mills through a purchasing agency, and the custom of certain mills who while maintaining the standard price of board give to certain customers what the paper stock men claim is a form of secret rebate through an agreement to purchase their board waste at a higher figure than the one maintaining in the open market. This last practice which the paper stock men say is becoming more extensive is regarded as particularly pernicious, since, in their opinion, there is a two-fold offense involved, first: a secret rebate; second, advent of the board manufacturers in the paper stock business.

Paper and Cordage Outing Planned

The Paper and Cordage Association of Philadelphia at their recent meeting were joined in membership by American Writing Paper Company, whose home office is in Holyoke, Mass., and will be represented at the meetings by Fred. Hastings from their local office in The Bourse; Hinde & Dauch Paper Company, Sandusky, Ohio, who will be represented by H. P. Johnson, 348 Drexel Building. This brings their total membership to 31; having passed their goal of thirty, they now aspire to a goal of fifty. It was unanimously decided at this meeting to hold another outing in September at the Bankers Country Club, the one held during the past month and reported in these columns a week or so ago having been such a wow that they immediately formulated plans for this one to be held presumably on their regularly stated meeting date, and to extend into the evening with invitations to the fair sex to join them in dinner, bridge and dancing. Leslie C. Bartlett, of the Eastern Paper Manufacturing Company, who served as chairman of their previous outing, has been re-elected to serve in that capacity for this gala affair; Ellsworth Richards, of the Buffalo Envelope Company, is publicity manager; J. R. Howarth, of the J. R. Howarth Paper Company, will represent the fine paper houses, and Mr. Coath, of Frank W. Winne & Son, Inc., will represent the rope and twine houses.

News of the Trade

George K. Hooper, president of Hooper Paper and Twine Company, Inc., accompanied by Mrs. Hooper and their charming young daughter, will leave for Ocean City, Md., during the month and will be gone ten days.

Miss Helen T. Garrett, daughter of Sylvester Garrett, who has been teaching English in a High School at Armentieres, France, and who has been majoring in French history and philosophy at the University at Lille, has returned to her home in Philadelphia, and for the time being will act as assistant to her father in his office.

Ontario Paper Market Conditions Improve

Volume of Sales Transacted During Past Month Slightly Higher—News Print Paper Manufacturing Operations Stimulated—Coated Paper Mills Only Moderately Active—Outlook for Fine Paper Division Brighter—Coarse Paper Section Continues Quiet

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., August 7, 1933.—Despite the height of the holiday period the Ontario wholesale paper trade was enabled to show a slightly better record of sales in July as compared with the previous month and the whole tone of the paper industry is now slightly better. Business, however, is not what it should be and the orders coming through are still individually small, with the consumer moving cautiously in his purchases and the paper merchant himself resisting any possible impulse to put in stocks of any grades.

As far as the Toronto wholesale paper market goes it would seem that while there are encouraging signs that some really good business is in the offing they are not quite so definite as they are in Montreal, for instance, where there is said to have been a distinct increase in sales volume during the past couple of months.

Good Prospects for Fine Papers

The consensus of opinion appears to be that the prospects of the fine paper market at the moment augur better than at any time since the depression started. Some of the wholesalers report that the demand for the better grades of fine papers is gradually replacing the call for the cheaper classes and this in itself is a favorable sign.

Till a month or so ago, speaking generally, demand, outside that for the bread-and-butter lines had been of the most discouraging dimensions. But the fevered stock exchange activities of late resulted, as one of its by-products, in the placing of some nice orders for some of the higher grades of paper. The Ontario paper merchants, also, are looking for the release in the near future of some high-class publicity campaigns which should materially add to the consumption of high-grade papers.

Coarse Paper Market Active

The coarse paper market continues quiet, with sales light.

There has been no increase in manufacturing activities during the past month nor has there been any decrease to speak of, although news print operations have had about a twenty per cent stimulation. Coated paper mills are operating lightly and tonnage has been off. Mills making glassine, greaseproof and waxing paper have been getting some fairly good business but it is in the face of a lot of competition from the United Kingdom. Manufacturers there have been sending in a considerable amount of this line of paper and with duty included the quotations have been under the cost of production by the Canadian mills.

Dealers in paper stock report a considerable increase in demand and they are about at their wit's end for supplies. They have had to increase the prices they are paying to the collectors from whom they purchase by around fifty per cent. But even at that it does not enable them to get supplies. For the prices payable in New York for paper stock have been gradually increasing. Hence, instead of Canadian dealers being able to import stock from the United States, which they can generally count on doing, stock is actually being exported in considerable quantities from this country to the United States.

As to the board mills, it is stated that this is the first time when prices of both paper stock and board have been higher in New York than in Toronto. Some of the board mills may be rather awkwardly placed by the advancing and advanced prices of raw materials, if they happen to have entered into contracts for a term for the supply of board based on former raw material prices.

Although there are fairly good prospects for the summer manufacture of paper boxes for the coming Christmas trade in Ontario, no actual operations have been deferred. Under normal conditions activities along this line would have been in full swing by now but at the moment the plants are only moderately busy on the general run of work. Prices are down and there is extremely keen competition among the folding box manufacturers. On the the other hand some increased business has been coming into the set-up plants, and they are not doing too badly. Board prices are up and they should remain unchanged for this month at least. In the meantime prices of waste are up and it would not be surprising if there was another boost of board quotations before the summer is over. The corrugated section is decidedly quiet.

Paper Firms Among New Industries

Twenty-nine new branch plants were established in Canada during the first six months of 1933, 25 of them branches of United States companies, and four having their headquarters in England. In addition, forty new Canadian manufacturing enterprises got under way. Wood and paper manufacturing plants naturally take a prominent place in Canada, eight new plants being started to manufacture products which may be classified under this group. With the news print, book and writing paper fields overcrowded, paper specialty lines form the majority of the new industries. In addition to the new industries which were started during the period, a number of existing Canadian factories completed agreements with United States firms to manufacture in Canada for them. Many of these agreements have proven a valuable source of revenue for the Canadian plants.

Boxboard Plant in Good Shape

Since the production of the highest grades of boxboard began in the plant of Hinde & Dauch Paper Company at Toronto, it has been stepped up from thirty tons, which was the original daily output, to better than fifty tons a day at present. The mill has been producing chiefly patent coated board, bleached machine lined boards, pulp boards and folding boxboards. In the course of a conversation Mr. Winchell, the general manager, expressed himself as thoroughly well satisfied with the way the new enterprise is developing thus far, "although," he said, "increased volume is still much needed". He added that from information he had from across the border, he thought there was good ground for being reasonably sanguine as to the future ahead of the boxboard industry. Adverting to the question of the marketing of the company's output, he said that, with appreciation of the pound sterling in Canadian funds, he was looking forward to at least a certain amount of business with Great Britain and other Empire countries.

Code of Fair Competition for the Paper Bag Manufacturers of the United States

To effectuate the policy of Title One of the National Industrial Recovery Act, during the period of the emergency, by reducing and relieving unemployment, improving the standards of labor, eliminating competitive practices, destructive to the interests of the public, employees and employers, relieving the disastrous effects of over-capacity, and otherwise rehabilitating the Paper Bag Industry, and by increasing purchasing power, and in other respects; the following provisions are established as a Code of Fair Competition for the Paper Bag Manufacturers of the United States.

The term "paper bag manufacturer" as used herein, refers to any individual or organization engaged in the conversion (by machine or by hand) of paper or allied products into containers of the type commonly known as Paper Bags.

This Code shall apply to all territory embraced under the National Industrial Recovery Act.

On the acceptance of this Code by a majority of the Paper Bag manufacturers, the Executive Committee of the Paper Bag Manufacturers Institute shall act as a Planning Committee for the industry, and such Planning Committee is authorized to negotiate the completion ot the Code with the Government and make any agreement necessary as to any changes which the Government or its authorized representative may require.

Section 1—Labor

(a) Employees shall have the right to organize and bargain collectively through representatives of their own choosing, and shall be free from the interference, restraint or coercion of employers of labor or their agents, in the designation of such representatives, or in self-organization or in other concerted activities for the purpose of collective bargaining or other mutual aid or protection.

(b) No employee and no one seeking employment shall be required as a condition of employment to join any company union or to refrain from joining, organizing or assisting a labor organization of his own choosing;

(c) On and after the effective date the minimum wage which shall be paid by employers in the Paper Bag Manufacturing Industry to any of their employees except semi-pensioners shall be at the following rates:

(1) Northern Zone, which shall consist of all of the territory of the United States except the States named in subdivisions (2) and (3):

Male labor 32½ cents per hour
Female labor 27½ cents per hour

(2) Central Zone, which shall consist of the States of Delaware, Maryland, Virginia, West Virginia, Kentucky, Tennessee and North Carolina, and the District of Columbia:

Male labor 31¼ cents per hour
Female labor 26¼ cents per hour

(3) Southern Zone, which shall consist of the States of South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas and Texas:

Male labor 30 cents per hour
Female labor 25 cents per hour

(d) On and after the effective date, employers in the Paper Bag Manufacturing Industry shall not operate on a schedule of hours of labor for their employees in excess of eight (8) hours per day and forty (40) hours per week per employee. Administrative office employees and supervisory staff, repair crews, electricians, cleaners, outside crews, firemen, engineers, time keepers and watchmen are excluded from the provisions as to hours of labor.

(e) Workers may be employed without the regard for the provisions of this Code when necessary, to protect property in case of fire, flood or other Acts of God, or any emergency repairs;

(f) Any individual plant may be exempted from the above requirements as to maximum hours of labor to such extent and for such limited period as may be necessary to train additional employees in order to comply herewith or as may be necessary as a result of a local housing and/or labor shortage, making it impossible to procure the additional labor necessary to comply with such maximum hours, provided that in any such case proof of such condition shall be furnished to Executive Committees for the various paper bag manufacturing groups and the ruling of said Committees in respect thereto, shall be binding upon the party asking the exemption;

(g) No one under 16 years of age shall be employed by any paper bag manufacturer.

(h) The provisions of this Section shall take effect fifteen (15) days after approval of this Code by the President of the United States.

Section 2—Trade Practices

No Paper Bag Manufacturer Shall:

(a) Induce or attempt to induce the breach of a contract between a competitor and his customer.

(b) Neglect to enforce in letter or in spirit, either by buyer or seller, business obligations in the form of written contracts.

(c) Imitate the trade-marks or the trade name of a competitor.

(d) Defame a competitor by falsely implying to him inability to perform contracts or questionable credit standing, or by spreading false reports concerning his transactions with others.

(e) Falsely disparage the weight, substance, strength, grade or quality of a competitor's goods.

(f) Misrepresent his product.

(g) Sell goods below cost, except in the case of job lots. (What constitutes a job lot is to be left to the discretion of the Executive Committee appointed by and for each group of bag manufacturers as provided in the individual group trade customs supplementary hereto.) Cost in all cases shall include the current delivered market price on paper, the industry's average cost of converting, the industry's average cost of selling and delivery, plus interest on capital invested averaged for the industry, and all other normal items of cost; all as may be determined separately by a Cost Committee appointed by and for the group of manufacturers converting the class of bags represented by such Committee.

(h) Make or permit his agent to make contracts which do not cover the quantity, price and time for delivery.

(i) Pay or allow secret rebates, refunds, credits or unearned discounts, whether in the form of money, advertising allowances, free goods, or otherwise, or extend to certain purchasers special prices, concessions

or privileges not extended to all purchasers under like terms and conditions.

Section 3—Prices and Orders

(a) Each paper bag manufacturer shall publish and file with the Secretary of the Paper Bag Manufacturers Institute his complete price lists (including all printing schedules) with all differentials and terms, provided that no greater cash discount than 2 per cent shall be allowed; and shall strictly adhere to such published prices.

(b) No purchaser (with the exception of Agents and Brokers as may be defined by the various manufacturing groups) shall receive any commission, rebate or other consideration beyond the manufacturer's published wholesale price, and no buying syndicate of any character shall be considered eligible to the status of an Agent or Broker.

(c) Prices are guaranteed against decline to date of shipment only.

(d) All orders must be firm for shipment within 30 days from the date of the order. This shipment period may be extended to a maximum of 60 days in the case of certain "made to order" specifications as provided in the individual group trade customs suplementary hereto.

Section 4—Agents and Brokers

(a) Each manufacturer shall file with the office of the Paper Bag Manufacturers Institute a complete list of his authorized Agents and Brokers and each manufacturer shall hold himself entirely responsible for the activities of such authorized Agents and Brokers, as regards their selling policies and practices. This list shall be available to all manufacturers in the same group.

(b) The name of any Agent shall be filed with the Institute at least one week before such agent may begin to function as an Agent.

Section 5—Trade Customs

Because of the wide variations in the conditions surrounding manufacturers, distribution, and use of different classifications of paper bags, separate Trade Customs for each classification are required, and as such shall be made supplemental to and shall have the same force and effect as all other provisions of this Code, when and if approved by a majority of the manufacturers engaged in the production of the particular class of bags covered, and by the President of the United States.

Section 6—Associations

The Paper Bag Manufacturers Institute, while originally organized by and for the Grocery Bag Division of the Industry, is today the largest representative national organization of paper bag manufacturers, and imposes no inequitable restrictions upon membership therein to manufacturers of paper bags.

Section 7—Effective Date and Modification of Code

(a) This Code shall become effective thirty (30) days after same shall have been approved by the President of the United States, except as to the fifteen (15) day period provided in the Code in respect to labor.

(b) Amendments to and modifications of this Code may be proposed by any of the groups covered by this Code, provided the effect of such change or changes shall be limited to the particular group proposing the change, and if and when approved by the President, shall become part of this Code, and effective within thirty (30) days after such modification shall have been approved by the President of the United States.

(c) The parties subscribing to this agreement recognize that the President may, from time to time, cancel or modify any order, approval, license, rule or regulation provided for by this agreement and/or the National Industrial Recovery Act, and agree to accept and to operate their plants in accordance with such modification of this Code.

The foregoing Code of Fair Competition shall constitute the Code of Fair Competition for the Paper Bag Manufacturers of the United States.
July 20, 1933.

Fair Trade Customs of Grocery Bag Group

Part of A Code of Fair Competition for the Paper Bag Manufacturers of the United States governing all manufacturers in respect to the following classes of paper bags: Grocery Bags, Nail Bags, Sugar Bags, Shot Bags, Standard Sacks, Poultry Sacks, Bundle Sacks.

Section 1—Planning Committee

(a) The Executive Committee or its alternates, elected by the manufacturers producing the above classes of paper bags, shall serve as the Planning Committee for such group of manufacturers, and is empowered to represent and to act for them in any and all negotiations necessary for the proper organization of the Grocery Bag Industry, and the operation of same in accordance with the principles of the National Industrial Recovery Act, to the end that wages and employment shall be increased, equities of investors preserved, and the general welfare of the industry safeguarded, all as may be consistent with law, and is hereby authorized to exercise such powers as may be granted by the said Act to enforce all provisions of the Code of Fair Competition and the Trade Customs for the Grocery Bag group; and any controversies or complaints, either among manufacturers, or as to the provisions of this Code, shall be submitted to said Committee for action.

(b) It is further provided that on the acceptance of this Code by the majority of the manufacturers of Grocery Bags and kindred products, that the Planning Committee for the Grocery Bag group as covered by these Trade Customs, is authorized to negotiate the completion of the Code with the Government and make any agreement necessary as to any changes which the Government or its authorized representatives may require.

Section 2—Standard Weights and Brands

(a) There shall be three recognized standard weights of Grocery Bags, as follows:

Popular Weight Kraft	Heavy Duty Kraft	Sulphite or Sheets Comparable in Quality to Sulphite
¼ to 2 lb.....27¢	¼ to 2 lb.....30¢	¼ to 3 lb.....30¢
3 to 4 lb.....30¢	3 to 5 lb.....35¢	4 to 8 lb.....35¢
5 to 8 lb.....33¢	6 to 8 lb.....37¢	10 to 25 lb.
10 to 12 lb.....35¢	10 to 12 lb.....42¢	inclusive .....42¢
14 and up.....39¢	14 and up.....46¢	

(b) All grocery bags listed or sold as conforming to these standards shall be made in the specified weights, size for size, with permissible variations not to exceed 5 per cent, over or under. Any bags made in standard grocery sizes, but in weights heavier than the above schedules, shall be sold at an upcharge, which, in percentage, at least equals the percentage of weight increase as compared with the nearest schedule of

weights and prices. No unbleached (brown or colored) Kraft grocery bags shall be made lighter than the schedule shown as "Popular Weight Kraft," and no Sulphite Grocery bags shall be made lighter than the schedule shown as "Sulphite or Sheets Comparable in Quality to Sulphite."

(c) Any consistent variation beyond the 5 per cent tolerance shall be considered a violation of this Code.

(d) No Grocery bags shall be sold by a manufacturer without brand name and size marked on each bag, excepting job lots as provided for in the Code of Fair Competition for Paper Bag Manufacturers, which is annexed hereto and a part hereof.

(e) No manufacturer shall show a size mark on the Grocery bags he manufactures unless such bags conform to the capacity requirements as specified in Simplified Practice Recommendation No. 42, published by the U. S. Department of Commerce, or in any modification or change thereof as subsequently published.

(f) Each manufacturer shall file with the Secretary of the Paper Bag Manufacturers Institute a complete list of the brand names (including private brands) under which he manufactures Grocery bags, and before any other brand name is used, shall register it with the Secretary of the Institute at least two weeks prior to use.

Section 3—Commitments

All orders must be firm and signed by the customer, with final specifications calling for shipment within 30 days from the date of the order. Acceptance of blanket orders is considered a violation of the provisions of this Code.

Section 4—Agents and Brokers

(a) A manufacturer's Agent is one who:

(1) Confines his sales exclusively to the "Wholesale Trade." In the event that an agent has a branch or subsidiary which is a wholesaler selling the consuming trade or is a branch or a subsidiary of such a wholesaler, such wholesaler shall be sold by the manufacturer direct, at the manufacturer's published price, with no commission or other consideration paid by the manufacturer to the agent on the business from such wholesaler. A house or unit shall be considered to be a branch or subsidiary of another if 51 per cent thereof is owned or controlled by such other and/or if 51 per cent of the actual bona fide ownership of both is held or controlled by the same interests.

(2) An Agent must confine his efforts on the grades of bags covered by these Trade Customs exclusively to the products of one manufacturer, and shall not handle or purchase such grades from any other manufacturer without the consent of his principal.

(3) Conforms strictly to the published prices and announced policies of his principals.

(b) Each Agent and/or Broker shall send to his principal daily a report of his commitments and sales. He shall also send to his principal daily, a report of shipments from his stock.

(c) No Agent shall own bags for his own account at the previous price when a price change is announced by his principal. That portion of the inventory against which no commitment has been reported or sale made previous to such price change, shall be adjusted to the new price. Thus, all Agents sell strictly on commission.

(d) Brokers shall conform to the exact status outlined for Agents, except that Brokers shall do no billing.

(e) The Planning Committee is hereby given jurisdiction to determine whether or not an Agent or Broker nominated by a manufacturer qualifies as such within the meaning of this Code. Each manufacturer shall require that all his Agents and Brokers shall accept the provisions of this Code and shall operate in accordance therewith. The Planning Committee, through a certified public accountant designated by such Committee, may audit the records and books of each such Agent and Broker as to transactions coming within the meaning of this Code.

Section 5—Wholesale Trade

(a) The grades of bags covered by these Trade Customs shall be sold by a manufacturer, his Agent or his Broker, to the "Wholesale Trade" exclusively.

(b) "Wholesale Trade" as used herein refers to paper merchants, that is merchants whose business is primarily the distribution of paper and paper products by resale, who maintain a warehouse and who regularly carry a complete stock of the lines they offer, and who buy in minimum quantities of 25 bales, one delivery; and to other wholesale merchants whose business is exclusively wholesale and who maintain warehouse stock and who buy bags in minimum quantities of 25 bales, one delivery. A manufacturer and/or his agent or broker may also sell at the manufacturer's published wholesale price schedule the following classes of consumer trade: (1) Consumers of assorted paper bags who normally take a carload shipment as hereinafter defined. (2) Consumers who take delivery in 30 days of 600 bales or more of assorted paper bags.

(c) No manufacturers shall make drop-shipments direct to an account sold by the manufacturer's customer.

Section 6—Quantity Differentials

(a) Recognizing the cost of distribution, all sales in L/C/L or Pool Car shipments, whether from mill or warehouse, shall be at a 10 per cent differential above the manufacturer's carload price in all zones and cities.

(b) In shipment of a mixed car to one customer, a minimum of 600 bales of bags is required to obtain the manufacturer's published carload price; in shipments of lesser quantity, sales shall be at the manufacturer's published L/C/L price.

(c) On all cars (minimum 600 bales) delivered by truck, shipment shall be completed within 48 consecutive hours from the time shipments have been started on the order.

(d) On shipments into the States of North Dakota (excepting the cities of Grand Forks, Fargo, Wahpeton), South Dakota (excepting the cities of Sioux Falls and Yankton), Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Idaho, Montana, Washington, Oregon and California, 300 bales is the minimum number of bales that shall be sold at the car price.

(e) L/C/L pick-ups, by a customer, from either a manufacturer's mill or warehouse, or agent's warehouse, shall be at the Zone L/C/L price with no freight or delivery allowance. Carload pick-ups (600 bales within 48 consecutive hours) shall be at the Zone carload price, with no freight or delivery allowance.

Section 7—Freight Allowances

(a) Regardless of *actual* shipping costs, the price to any customer in any zone is that zone published price F.O.B. the mill, with actual shipping costs paid or allowed by the manufacturer to the customer's recognized freight terminal, but with no additional rebates or allowances made for the difference between actual shipping costs and freight or transportation rates.

(b) This completely eliminates all such practices as full freight allowance when shipment is made by overland truck at less than the freight rates, freight allowances

for re-shipment of local lots beyond the original delivery point of the carload, etc.

(c) In the case of a stop-over to a branch of the same purchaser, stop-over charges are to be paid by the customer.

Section 8—Retail Price

(a) In order to assure the stability of employment of labor and to protect the small wholesaler who purchases in less car quantities from unfair competition, bags sold by a manufacturer who is subject to the provisions of this Code, shall be sold by such manufacturer with the condition attached that same cannot be resold at less than the following writeups, and no purchaser hereunder, wholesaler and/or consumer, shall sell or attempt to sell at less prices:

1. 25 bales and over, one delivery, at not less than 2/10-2½ per cent above the manufacturer's published car price then in effect.
2. 10 to 24 bundles, one delivery, at not less than 3/10 per cent above the manufacturer's published car price then in effect.
3. Quantities less than 10 bales shall not be resold cheaper than 10 bales.
4. A paper merchant (wholesaler hereunder) and/or other wholesaler hereunder, may resell goods covered by this Code, in any quantity, one delivery, to any other wholesaler, or to a consumer to whom a manufacturer hereunder may sell, at a price which shall be at least 10 per cent higher than the manufacturer's published car price at the time of the resale.

(b) Provided, however, that the failure of a purchaser to comply with the aforesaid regulations, shall not be considered a violation of this Code by the manufacturer, his agent or broker, and further provided, that any manufacturer hereunder may on ten days' written notice to the Secretary of the Paper Bag Manufacturers Institute, discontinue selling bags with the aforesaid resale provision attached, and provided further that no such purchaser shall be expected to comply with such a resale provision beyond the duration of the National Industrial Recovery Act, and/or after the date of a written notice by the manufacturer producing such goods as above provided.

Section 9—Metropolitan New York

The Planning Committee, for the Grocery Bag group, shall define and set up a sales district to be called the Metropolitan District, and such Committee is hereby authorized and empowered to modify these Trade Customs insofar as may be deemed necessary to properly harmonize with conditions in such district, and the modification so made shall apply to the manufacturers, their agents, brokers and wholesalers and consumers doing business within such Metropolitan District.

Section 10—Statistics

(a) Each manufacturer of the grades covered by these Trade Customs shall report to the Secretary of the Paper Bag Manufacturers Institute, his production, orders and shipments of such grades of bags and in such form and at such times as may be determined by the Planning Committee of the Grocery bag group, and such other necessary data as may be requested by the Planning Committee.

(b) False reports shall be considered as a violation of this Code.

(c) The data as relating to an individual manufacturer thus reported shall be subject to audit upon request of the Secretary and must be held confidential by the Paper Bag Manufacturers Institute and by the Secretary, except as fully authorized to the contrary by a responsible officer of the reporting mill or as may be required by the Government of the United States under the terms and provisions of the National Industrial Recovery Act.

Section 11—Pro-Rationing of Shipments

Subject to the approval of the President of the United States, if and when the Planning Committee of the Grocery Bag group, through authorization granted by three-quarters vote, both by numbers and by volume of shipments of the members of the Institute comprising this group, shall decide on the policy of pro-rationing shipments, the manufacturers coming within the provisions of this Code shall conduct their activities on whatever basis is determined upon as fair and equitable for all coming within the provisions of this Code.

Section 12—Additional Productive Equipment

For the purpose of making it possible to maintain the hours of labor and the payment of wages provided, and for all other purposes provided in this Code, the following is deemed essential:

"Because of the very large over-production capacity existing in the Grocery Bag Industry as related to actual demand for its product, there shall be no addition to productive equipment for the manufacture of paper bags comprising this group by anyone coming within the provisions of this Code, whether actually engaged now in the manufacture of paper bags or not, without (a) ten (10) days' written notice to the Planning Committee of the Grocery Bag group, and (b) a license therefor from the President of the United States."

The foregoing Fair Trade Customs shall constitute the Fair Trade Customs of the Grocery Bag group, and the Code of Fair Competition for the Paper Bag Manufacturers of the United States is a part hereof, and such Code and this Code are one and inseparable.

July 20, 1933.

Substitution in Paperboard Code

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 9, 1933.—A Code has been submitted for the Paperboard Manufacturing Industry, which industry has requested the substitution of so much of paragraph 2 of such code as is quoted below:

"The maximum number of working hours of all employees engaged in the production of paperboard shall be eight hours a day and forty hours per week. Employees may be employed for such additional hours in any week as shall be necessary for maintenance of equipment, provided such additional hours shall be permissible only with respect to employment on equipment which is not in operation.

"Such maximum hours of labor shall not apply in cases of emergency for protection of property."

for paragraph 3 of the P. R. A.

In this connection it shall be understood that the word "maximum" appearing as the fourth word in line twelve, paragraph 4, of the President's Re-employment Agreement as printed in Bulletin No. 3, National Recovery Administration, shall refer to the 40-hour week as included in this proposed substitution.

After consideration and with the approval of Labor Advisers and Industrial Advisers, N. R. A. has consented to such substitution, and employers in such industries may sign the President's Agreement on the understanding that such substitution shall be automatically effective and they may comply with the President's Agreement by conforming to

(Continued on page 49)

HEARINGS START ON CODE FOR WALL PAPER INDUSTRY

(Continued from page 13)

limit machines he would raise no objection to this feature of the code. He also asked that a plan of "open price listing" be incorporated into the code.

Mr. Paddock interrogated both Mr. Latham and Mr. Palmer as to the standard work week now prevailing in the industry and the attitude toward maintenance of wage differentials. It was disclosed that the "standard" week ranges from 40 to 60 hours, and in cases of union contract the standard is 50 hours. Mr. Palmer stated the desire of his own company was to arrange for "an equitable adjustment" of wages so that no one should work 40 hours per week for less than was received under the 50 hour week. He said he did not think arbitrary dollars and cents wage increases would be made to those in the intermediate wage schedules.

Asks That Minimum Wages Be Standardized

A. C. Hart, of the Imperial and Color Corporation, asked that minimum wages be standardized for similar kinds of work. He also suggested striking out the 80 hour a week limitation on machines, asking for a three shift running time for machines on the ground that the wall paper industry is a speculative one, particularly in the matter of the introduction of new products.

W. A. Huppich, of the United Wallpaper Factory, Inc., opposed this view, asking for only one shift of 40 hours for workers in any one week, except during peak load seasons, with an 80 hour limit on machines. Asked by Mr. Paddock if he could justify exclusion of the classes of labor from the minimum age provision as stated in the proposed code, Mr. Huppich declared that he could do so on the ground that concessions to labor already made went further than was justified by conditions in the industry today.

Strong objections to machine limitation feature were entered by Justin P. Allman, president of the National Wallpaper Wholesalers Association, representing 240 wholesale outlets or fifty per cent of these outlets and 80 per cent of the dollar volume of the distribution of the industry. He attacked the two shift limitation on machines on the ground that it would induce "overproduction and wide-spread demoralization" in the industry, and would restrict employment of about 15 per cent of the clerical and other help in the industry. He declared that there is not enough business for more than a 40 hour shift, and even that would double the present output.

William Wilson, of Buffalo, president of the United Wallpaper Craft, made a statement in favor of a minimum wage of 50 cents an hour and $15. a week, limitation of "stretch-out" tendencies in the industry, no employment of apprentices to be made during the life of the code, a thirty hour week for rollers with a 40 hour maximum for others and double pay for overtime, and constitution of a supervisory committee rather than a co-ordinator.

Mr. Paddock adjourned the hearing Monday afternoon asking representatives of the industry to attempt to "get together" over night on the controversial matters in the code. He said "this act must be worked out in spirit first, and facts second."

Speaks for Unskilled Workers

The second day of the hearings on the proposed manufacturers' Code of Fair Competition for the Wallpaper Industry saw presentation of suggestions by labor representatives and agreement on certain of yesterday's amendments to the code, by representatives of the industry.

Speaking for the unskilled workers of the industry, estimated to comprise about 80 per cent. of those engaged, Boris Shishkin, of the American Federation of Labor asked that the code provide for a maximum 30 hour week, with "reasonable" exception for supervisory and emergency staff, and a minimum hourly rate of 52 cents, with a minimum weekly wage of $16. for these workers.

Mr. Shishkin asked that the wage differentials in the higher paid schedules be maintained in proportion to the minimum established, and that no one receive less than the hourly rate paid to common labor. No person under 18 years of age should be employed in the industry, and no age discrimination should be made if the worker is considered efficient.

A co-ordinating board should be set up for the industry, Mr. Shishkin stated, to work in co-operation with the administrator. This would constitute the industry's long range planning, fair practice and adjustment agency. Decisions of the board would become integral parts of the code, if approved by the President. The board would consist of five members, one of whom would be appointed by the President, two would be representatives of employers and the other two representatives of labor. The board would be afforded technical sub-committees dealing with statistics, accounting, labor, adjustment and fair practices. Until the board should be organized Mr. Shishkin asked that a committee similarly composed, be appointed by the President to act in the interval.

W. J. Wilson, president of the United Wallpaper Craft of North America, objected to article 10 of the code, which as proposed would prevent establishment of new factories in the industry, until June 1, 1935. He stated that this would stabilize market conditions in the industry under control of the manufacturers as now organized.

Upon the suggestion of Deputy Administrator Paddock that the manufacturers co-operate as much as possible on controversial problems, A. R. Palmer, a member of the American Manufacturers advisory committee reported agreement on certain amendments offered in yesterday's hearings.

Amendments Agreed To

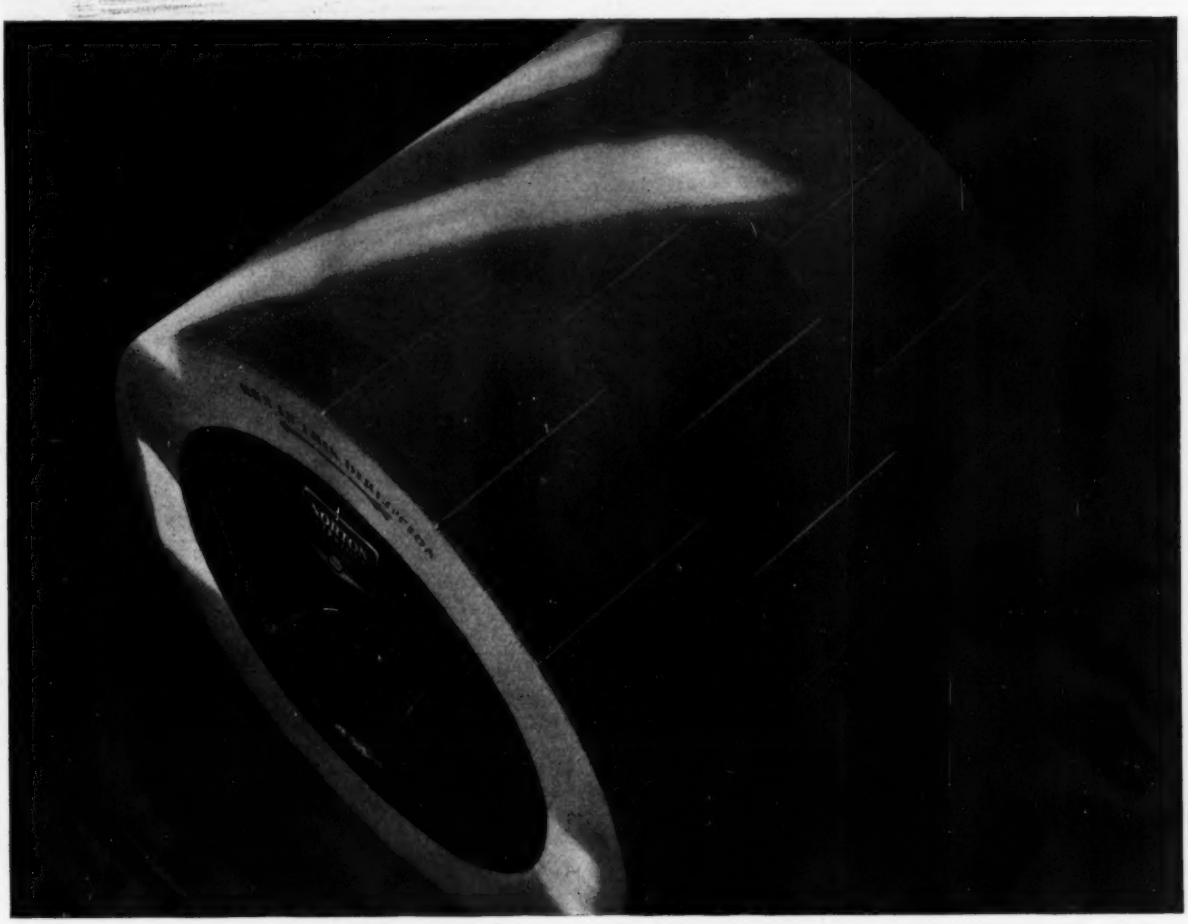
Among the amendments agreed to, offered by Mr. Palmer, were the following:

That the code should be known as the manufacturers code; certain definition of jobs; lines and current year; that persons may be hired without regard to labor union affiliations, and "promoted upon individual merit"; that the only excepted classes coming under the exemption clause in the code should be "outside helpers, emergency staff, superintendents and supervisory crew," thus bringing under the minimum wage provision engineers, electricians, firemen, watchmen, office and shipping staff, previously excluded; that minimum wages should be standardized for similar classes of work; that the machine and new mills limitations be approved upon reference to administrative discussion.

To Represent Groveton Paper Co.

Bartlett C. Broderick will represent the Groveton Paper Company in Baltimore and Washington, D. C. beginning August 1.

Mr. Broderick has had many years of experience in the merchandising end and is well acquainted with the paper merchants as well as the convertors.



CUSTOM MADE STONE

Pulp mills today have the advantage of flexibility in pulpstones.

Each Norton pulpstone is a custom made stone—to meet the customer's requirements. The Norton Laboratories study the pulp stock, the length of fibers, thinness of fibers and all other factors that must be taken into consideration.

The requirements of the mill producing board and the mill producing book papers are not the same. There is good reason for the Norton Laboratories' research work in connection with each order.

One mill desires a stone that will produce stock with abnormally high freeness. Another mill aims to produce thin, short fibers—slow pulp. Then again power may be an important consideration—low horsepower per ton and high production with good quality.

Stone structure controls paper quality.

The right structure can be obtained through Norton Laboratories.

NORTON COMPANY
WORCESTER, MASS.

NORTON PULPSTONE

A New Type Stock Valve

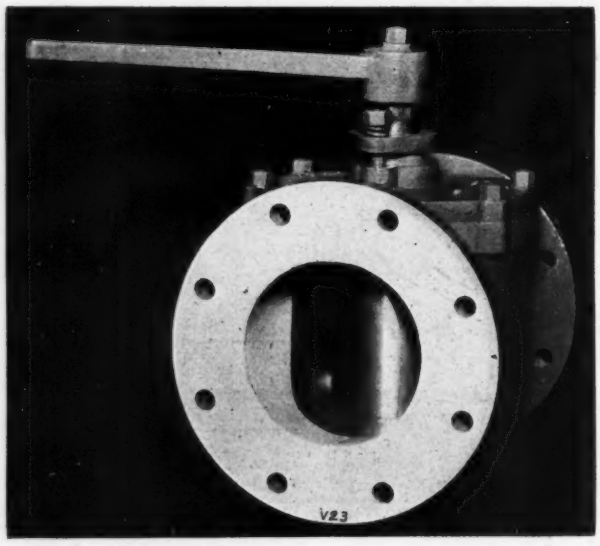
Since the days when machine made paper supplanted that made by hand, paper and pulp mills have been searching for a better shut off valve. Paper and pulp stock, due to its fibrous nature, presents problems which are not satisfactorily overcome by ordinary valve construction. The average mill man has been made to feel that plugging, excessive leakage, sticking, and seizing are all difficulties from which there is no release. A new type valve especially designed with stock handling problems in mind has recently been developed.

This valve combines all of the desirable features of both gate valves and plug valves and at the same time eliminates the difficulties previously encountered. The valve consists of a suitable body similar to the conventional plug valve body and a one-piece rotor. The seat, which is formed about one of the ports or openings of the valve is made on an eccentric. The rotor which engages against this seat is likewise made eccentrically.

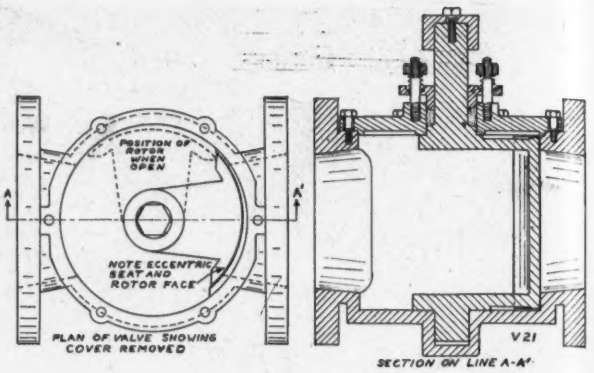
This construction has the following effect on the operation of the valve: assuming that the valve is closed; as soon as the rotor is turned slightly toward the open position the entire rotor face is immediately drawn away from the contacting surface of the valve seat due to the eccentric construction of the seat and rotor. In other words the rotor becomes immediately spaced from the valve seat during the initial part of the opening movement of the rotor.

Because of the eccentric rotor and seat, the valve opens and closes freely under all conditions without sticking or seizing of the rotor in the body. The presence of a film of corrosion, which is formed inside of stock lines does not affect the easy operation of the valve. There are no parts which must press tightly against each other throughout the opening and closing movements of the valve. This makes it impossible for the rotor to carry stock fibres into any place of small clearance and cause sticking. Users have proclaimed the valve to be entirely satisfactory for service on stock and white water where endless difficulties were previously encountered.

The valve is very simple, the one-piece rotor being the only moving part. Due to the eccentric construction wear



NEW VALVE FOR STOCK HANDLING


POSITION OF ROTOR WHEN OPEN
NOTE ECCENTRIC SEAT AND ROTOR FACE
PLAN OF VALVE SHOWING COVER REMOVED
V21
SECTION ON LINE A-A'

CROSS SECTION OF VALVE

of the rotor and seat are automatically compensated for. As these parts wear the rotor merely turns further in the closed position to bring itself into a tight engagement with the seat.

The various size valves open to the full area of the pipe size for which they are built. An internal stop is provided at the full open position and the rotor may be set in any position throttling the flow as desired. For convenience in setting the valve at any degree of opening an indicator is provided showing just how much the valve is opened.

Complete information about this valve may be had by inquiring of The DeZurik Shower Company, Sartell, Minn., or Paper Machinery Limited, 913 Drummond Building, Montreal, Que.

Fafnir Ball and Roller Bearings

The Fafnir Bearing Company of New Britain, Conn., has just issued a paper mill catalog which gives a very comprehensive treatise on the use of anti-friction bearings in paper mills. It describes, first of all, specific applications of the use of various types of ball bearings including certain types of single and double pillow blocks which employ a wide inner ring bearing which is peculiar to the Fafnir line and contains many advantageous features.

A rather interesting feature about this catalog is the fact that it is the first piece of literature which lists and describes an entirely new line for the Fafnir Bearing line, namely, roller bearings. The Fafnir Roller Bearing is a solid roller type with precision-ground end rings and accurately placed spacer bars. Each roller is made in two parts to prevent any possibility of skewing and the solid design rather than the hollow wound type affords a maximum in load-carrying capacity. Fafnir also illustrates in this book a typical industrial roller bearing pillow block, one of the types which has been successfully used in the paper mill field.

The Fafnir Ball Bearings for paper mills are available in bores from ¼ to 5½ inches, speeds up to 10,000 r.p.m. and loads up to 20 or 30 tons. Fafnir Roller Bearings are made in bores from 3½ to 7⅜ inches, speeds up to 1500 r.p.m. and loads up to 150 tons.

Sutherland Co. Reports Profit

The Sutherland Paper Company, Kalamazoo, Mich., reports for the six months to June 30, net profit of $115,221 after taxes and charges, equal to 40 cents a share on 287,000 shares compared with net loss $50,153 in the first half, 1932.

Here's the way TO ASSURE HIGH QUALITY PULP *at lowest cost*

An unusually fine picture of the Taylor Temperature Recording Regulator in action on a Caterpillar Type Grinder. A tough job—but the Taylor System licked it.

Taylor Recording Regulator automatically keeps this Caterpillar type grinder running at normal temperatures

WHAT ordinarily would be a tough job is remarkably easy for a Taylor System of Grinder Temperature Control. Whether it's keeping grinder temperature normal on a caterpillar type grinder (as above), or on pocket or magazine types, it's all the same to a Taylor System. This Control is one of the best money-saving investments mills have made. They have said so themselves.

You need correct grinding temperatures to produce maximum tonnage of high-quality stock at a low cost per ton, don't you? Right. Also to assure uniform stock, texture, color and freeness, the greatest fiber strength, and correct felting characteristics. And to lengthen stone life and save reburring and replacement costs.

Then, look to the Taylor Control of Grinder Temperatures to maintain that correct temperature automatically. It's a simple system—practical and always reliable. It has been an economical and profitable investment wherever installed in United States and Canadian mills.

Business is looking up. But perhaps you are still looking for ways to cut costs further and increase pulp quality. Then put Taylor Automatic Grinder Temperature Control in your mill tomorrow, if you don't have it now.

For more details, write Taylor Instrument Companies, Rochester, N. Y., or Taylor Instrument Companies of Canada, Ltd., Toronto, Canada.

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Indicating / Recording · Controlling

TEMPERATURE *and* PRESSURE INSTRUMENTS

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GOVERNMENT REDUCES ACTIVITIES OF BUREAU OF STANDARDS

Owing to extensive reduction in its funds for the fiscal year starting July 1, 1933, which is more or less general throughout the Government departments as a part of economy measures, the Bureau of Standards will necessarily greatly curtail its activities and discontinue some of them entirely. This will make available for industry a large number of scientists who have had highly specialized training in fundamental chemical and physical research problems, and technologists who have had close contact with a large variety of manufacturing and other industrial problems. Secretary Daniel C. Roper, Commerce Department, of which the Bureau is a part, recently in discussing the Government economy plans, expressed the hope that industry would cooperate in them by absorbing Government personnel separated from the service. The Bureau of Standards would be glad to learn of prospective industrial positions and to assist in filling them satisfactorily from its staff.

The research activities in the Paper Section have been particularly hard-hit as it has lost all of its outside support of research associates, numbering seven, and two members of its own staff in addition. The separated personnel comprises thoroughly experienced and competent chemists, physicists, and laboratory assistants.

The announcement by Secretary of Commerce Roper that the simplified practice and industrial standardization work of the Bureau of Standards will be turned over to the American Standards Association has aroused many questions concerning the continuation of this work among groups which have participated in activities of the Bureau. Regarding these conjectures Howard Coonley, the president of the association says: "I am pleased to be able to state that provision is being made for assuring continuity on the technical projects. A skeleton staff to be maintained in the discontinued divisions and sections of the Bureau during a transition period will greatly facilitate the transfer. Individual projects in standardization and simplification can be carried on without any essential change in method. Plans are now being made for obtaining greater financial support for the ASA, and when this is accomplished, it is hoped that the ASA may be able to take over a number of the Bureau's personnel.

"It is the belief of Secretary Roper, as well as myself, that this transfer will have far-reaching consequences for every branch of American industry concerned with standardization. The effect of the Secretary's decision is to concentrate the responsibility in a single organization representative of industry, the public, and the government. The consolidation of functions in the hands of a single organization is especially important since it comes at a time when the national economy demands a sharp acceleration in standards-making to keep pace with the need for industrial agreements under the National Recovery Act.

"We feel that this work is vital to American industry—that the possibilities for joint action opened up by the National Recovery Act will be greatly broadened if industrial and other groups can cooperate in the establishment of a comprehensive system of fundamental technical standards; and we are happy to offer to all of these groups the machinery of the American Standards Association and the Bureau of Standards—now welded into a single unit."

The American Standards Association is a federation of 37 national technical societies, trade associations and governmental bodies. It was organized in 1918 to serve as a clearing house through which the standardization work of technical and industrial groups could be correlated. Since that time it has performed notable service by preventing duplication of work in this line and by eliminating conflicting standards. Its work is carried on by 400 standardization committees on which 3,000 technical experts serve as members. The association is supported by those groups which benefit from its activities.

The change according to the *New York Sun* is a wise and logical development of the industrial standards system. The transference of most of the nonlaboratory work of the Federal bureau to a privately controlled, nonprofit agency does not mean a radical change in methods of cooperation between business and government. Seven of the largest Federal departments, in fact, are members of the American Standards Association, which is controlled by a board of directors drawn from leading business enterprises. Thirty trade and technical societies are among the industrial member bodies.

The government has had an important part in the work of this association, but exercises no control over it. Many commercial standards devised through research in Washington have been submitted to the association for approval. More than 10,000 standards and specifications are in its files for the use of members in the buying of supplies and in testing and production.

Through this and other agencies private business has demonstrated its ability to regulate itself so far as many of its common needs are concerned. It is right that business should support and carry out such studies as those leading to formulation of standards for its own use. The Federal Bureau of Standards may well continue to operate laboratories for research and testing, and to work with private industry on technical problems. But the movement toward confining the bureau's work largely to those duties required by the government should go forward.

The technical improvement of business efficiency should not be part of the growing burden of governmental duties, its cost swelling taxation. The latest action of the Bureau of Standards, moreover, may be interpreted as a sign that the government does not intend to enmesh business hand and foot with official chains of regulation.

Historical Appleton to be Host to TAPPI

Appleton, a city in the center of a much better than average dairy and farming district, contains a diversity of manufacturing, paper, pulp, wood, wool, metal, products, a wide diversity of retail and wholesale trade. In all important aspects, Appleton is, statistically and geographically, as close as anyone could come to a normal city. Experiencing neither great booms nor sharp depressions, Appleton has a history of steady growth from 1848, when the settlers built their rude shacks around the then infant Lawrence Institute to the present day.

Appleton and its necessary adjunct the Fox River Valley, was originally the haunt of the Winnebago, the Menominee, the Mascoutine, Patowatami and the Fox Indians. The Fox, the most fierce, treacherous, and thievish of all the tribes, were the most interesting.

Mingled with the Indian history of the Fox River Valley is that of the Jesuit missionaries or "black gowns" as they were called by the redmen. Father Claude Jean Allouez is recognized as the pioneer missionary having established a mission on the Fox River in 1670. The Indians were obdurate and complacent and little progress was made by the "black gowns". In 1634 Jean Nicollet was commissioned to visit the tribes of this section. Later came the traders and others seeking homes or adventure.

In 1836 the Fox River Valley was ceded to the United States by the Treaty of the Cedars for the price of $692,110, an area covering 4,000,000 acres.

In 1835 the first hut was erected at Appleton by Hippolite Grignon. The present city of Appleton was founded around the Lawrence Institute established by Amos Lawrence and the Methodist Episcopal Church. By July 3, 1849, the framework of the building was up and history records rapid progress from there on. Appleton was named after Samuel Appleton, father-in-law of Amos Lawrence, founder of Lawrence College.

A trip today by launch down the historic Fox River; through its 26 locks and with its drop of 175 feet from Lake Winnebago to Green Bay, providing 26 dams; offers a liberal education of the manufacture of pulp, paper, and paper and pulp machinery. One sees a diversity of plants manufacturing every conceivable type of paper and pulp. The water power has a potential force of 40,000 horse power maintained yearly by that enormous natural reservoir, Lake Winnebago, the largest fresh water lake entirely within the boundaries of a single state. The various plants offer a diversity of paper including newsprint, rotogravure, linen stationery from rags, bond and ledger papers, wrapping, manila and mimeograph paper, school stationery, tissue, wall paper, catalogue and numerous other staple and specialty papers; converting plants for coating, crepe, cardboard, holiday specialties, etc.; equipment manufacturing plants including wirecloth, wet machines, beaters, jordans, felts, calendar rolls, and in the immediate vicinity of the Valley, paper machines and digesters. Truly Wisconsin is a single entity as far as pulp and paper and its auxiliary equipment is concerned.

The future of Appleton and its environs were adequately foreseen at its early inception, consequently the present citizens can point to their city with pride for it possesses all necessities for an ideal city, schools, churches, playgrounds, golf clubs, lakes, beautiful homes, marvelous drives. Frequent, expedient means of transportation by air and rail or bus to the east, west, north, or south. A short drive and one is encamped at a beautiful lake resort providing fishing of all sorts, swimming, boating. In the confines of the city are maintained four beautiful golf courses, The North Shore, Butte des Morts, Riverview and Municipal Clubs. A real city where one need not lack pleasure or the means of a livelihood.

A real welcome and a genial reception awaits all those members and non-members of TAPPI who hope to attend the fall meeting at Appleton, September 26-28, 1933. Committee activity would put the proverbial bees nest to shame, and what a time the ladies are to have! It will be a two year's vacation concentrated in three days. For the men first of all will come a bang-up worthwhile technical meeting that will justly warrant the expenditure made by any plant in sending its representative to the Fall Meeting. Secondly comes entertainment and mill visits, smoker, banquets, luncheons, etc., entertainment in that incomparable manner put on by a gathering of pulp and paper men from the Fox River Valley. The yearly "Christmas Peddlers' Party", the yearly TAPPI, "Windup Party", and monthly TAPPI meetings are all noted for entertainment and congeniality. An especial effort should be made by every member of TAPPI, from the Atlantic to the Pacific, to attend the Fall Meeting at Appleton, September 26-28, 1933.

Geo. W. Millar & Co. Supports President

J. C. Mallalieu, president of Geo. W. Millar & Co., Inc., general paper merchants, of 248-290 Lafayette street, New York, writes to the PAPER TRADE JOURNAL, as follows:

"We are pleased to announce that we are in sympathy with the President's 'National Industrial Recovery Act' and beginning immediately, we have adopted a five-day week schedule, from Monday to Friday. We will be closed on Saturdays, not only our office but our warehouse and our cutting and rewinding department. Furthermore, to comply with this Act we have advanced the wages and salaries of our employees accordingly."

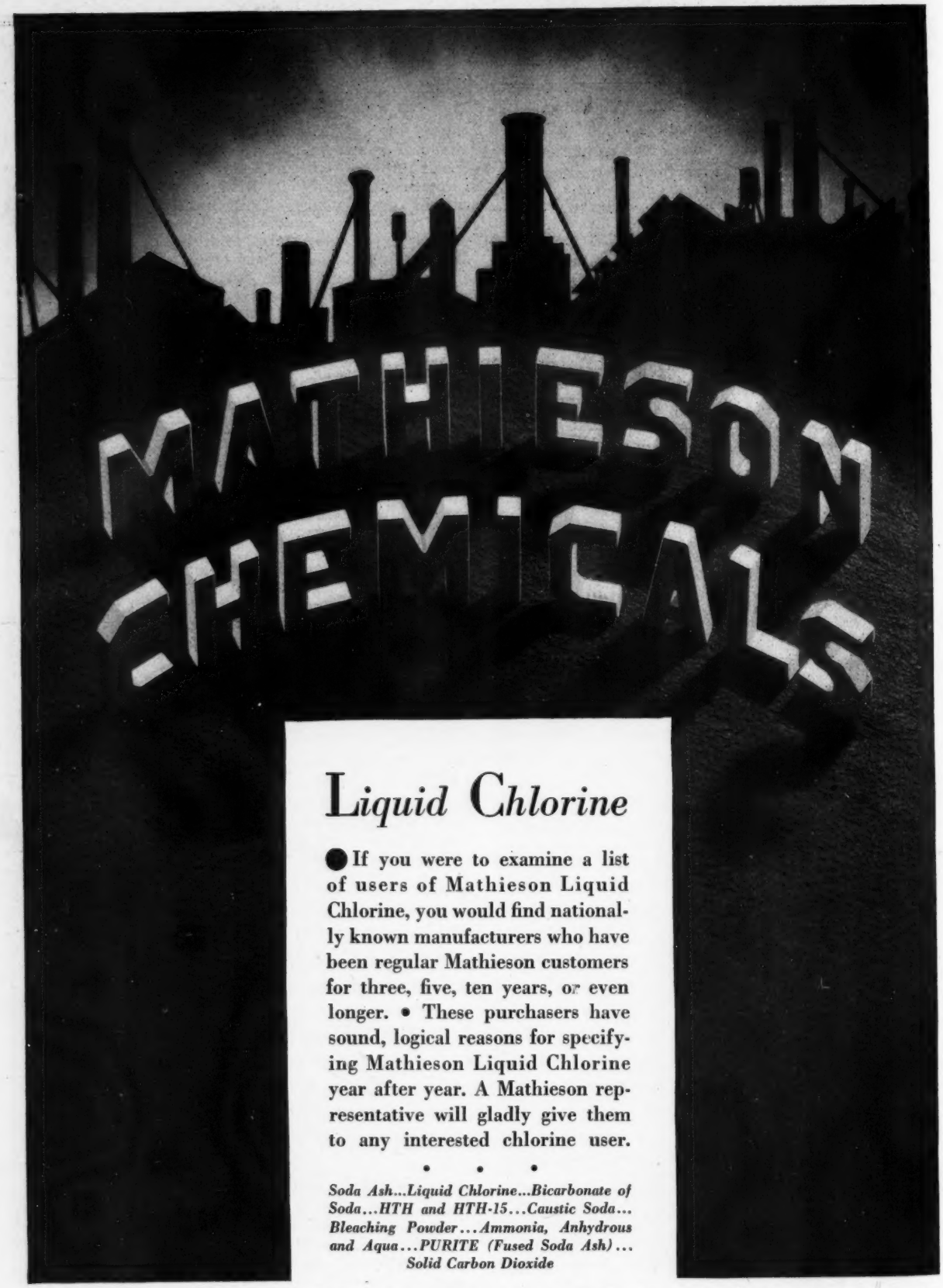
James Davis Adviser for Wall Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 9, 1933.—The National Recovery Administration has announced that James Davis, Chicago, Ill., president of James Davis, Inc., has been named as adviser in connection with the wall paper industry's proposed code.

Charles F. Hubbs & Co. Co-operates

In compliance with and in co-operation with the spirit of the National Recovery Act, the office and warehouse of Charles F. Hubbs & Co., will be closed on Saturdays until further notice, and they will operate on a five-day week basis.



Liquid Chlorine

If you were to examine a list of users of Mathieson Liquid Chlorine, you would find nationally known manufacturers who have been regular Mathieson customers for three, five, ten years, or even longer. • These purchasers have sound, logical reasons for specifying Mathieson Liquid Chlorine year after year. A Mathieson representative will gladly give them to any interested chlorine user.

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Soda Ash...Liquid Chlorine...Bicarbonate of Soda...HTH and HTH-15...Caustic Soda... Bleaching Powder...Ammonia, Anhydrous and Aqua...PURITE (Fused Soda Ash)... Solid Carbon Dioxide

***The* MATHIESON ALKALI WORKS *(Inc.)*, 250 PARK AVENUE, NEW YORK, N. Y.**

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

A New Process for the Moisture Control of Paper *

R. H. McKee[1] and J. S. G. Shotwell[2]

Abstract

During the investigation we have found the following:

(1)—In most cases the determination of only two points is needed to define the curve of the logarithm of the moisture content of paper plotted against the moisture content of air. That portion of the curve lying in the range of usual atmospheric humidity is a straight line.

(2)—The curve showing the variation moisture content of paper plotted against the moisture content of the surrounding air shows two changes of curvature. These changes of curvature occur at points corresponding to approximately:

(a) A molecular proportion of one water molecule to three, or four, glucose radicals.

(b) A monomolecular layer of water around the cellulose micelles.

(3)—Changes in temperature affect the moisture content of the paper when in equilibrium with the humidity of the air, if the atmospheric humidity is kept constant.

(4)—The rate of regain of moisture is more rapid than has been assumed in practice, attaining as much as one and a half per cent per second, when conditioned air simply sweeps across the surface, and three per cent per second when air jets impinging on the surface are used.

(5)—The rate of moisture regain varies with the difference between the moisture content actually in the paper, and that moisture content which would be present if the paper were in equilibrium with air of the same conditions of humidity and temperature.

(6)—The rate of moisture regain varies with the "furnish" but the maximum rates are practically the same for all papers.

(7)—A paper finishing method in which both the moisture content and the finish of the sheet can be improved by varying the point of application.

(8)—A method for the conditioning of the paper (or other fiber) in seconds instead of the hours or minutes required by the existing processes.

The following investigation was carried out in developing a new method of controlling the moisture content of paper during its manufacture on modern high speed machines. During the progress of the investigation a study was made of the relation between the moisture content of the paper and the humidity of the air surrounding it. The rate of change of the moisture in the paper was also determined.

The fact that the moisture content of paper varies with the humidity of the surrounding atmosphere, if sufficient time is allowed, has been known for many years, but practically no attention has been paid to either the rate of moisture change, or the effect of temperature on the equilibrium conditions. In this research these two factors have been studied. Of the two, less was known about the rate of the change of the moisture content though this is equally important industrially.

This investigation had its origin in a study of the troubles occurring at one of the larger Canadian newsprint mills and particularly troubles in January, 1927. The mill could not produce the newsprint paper with a moisture content above 6 per cent. The company owned two mills (which we shall call A and B). Both mills were using similar machines, running at the same speed, on as near identical "furnishes" as could be produced, although Mill A used only seven thousand pounds of steam per ton of paper for drying, as against some nine thousand pounds per ton in Mill B, the moisture content of A's paper was about three per cent lower than B's. Since paper is sold by weight and on a 10 per cent moisture content basis, this meant a considerable loss to a mill producing over two hundred tons of paper a day. It also led to difficulties with the customers as rolls picked up moisture during the shipment, which produced unsound and damaged rolls, and ones that had changed in weight, all of which was undesirable.

We have investigated the problem to find the cause, and, if possible, to devise methods of overcoming the trouble. Our investigations have shown, that by varying the atmospheric humidity around the "dry-end" of the paper ma-

* A dissertation submitted in partial fulfillment of the requirement of the degree of Doctor of Philosophy in the faculty of pure science, Columbia University.

[1] Member TAPPI, professor of chemical engineering, Columbia University, New York, N. Y.
[2] Student, Columbia University, New York, N. Y.

chine and especially around the calender stacks, the moisture content of the paper could be very closely controlled. Trials have shown that better results and more flexible operations could be obtained by this method than by the use of sprays of either steam or water, or by passing the paper over wetted rolls.

These results were unexpected, due to the extremely short interval of time for the conditioning to take place. There was less than five seconds of possible contact, generally not more than three seconds of effective contact between the paper and the air.

When the proposal was made that the trouble could be cured by this method, most of the mill men said that it was impossible as all of the previous investigators had stated that days, if not weeks, were needed for conditioning paper. It was pointed out, however, that these previous investigators had been discussing equilibrium conditions, whereas we were concerned in this problem with a rate of reaction by which the desired results could be obtained. This rate of reaction depended upon the rate of change of the moisture content of the paper, and the time of contact with the moisture laden atmosphere of the mill under consideration.

We have had available the facilities of a paper mill control laboratory and a large high speed news machine, and the data so obtained has checked that obtained by scientific investigations in the laboratories of Columbia University, where accurately controlled conditions were to be had. Finally the whole problem had been tied together so that a proper and detailed explanation of the facts and the underlying theory could be made.

Literature Review

The first step that was taken was a thorough literature study to find out what previous work had been done. This study brought the following facts to light:

(1) The previous work had been carried out with two views in mind.

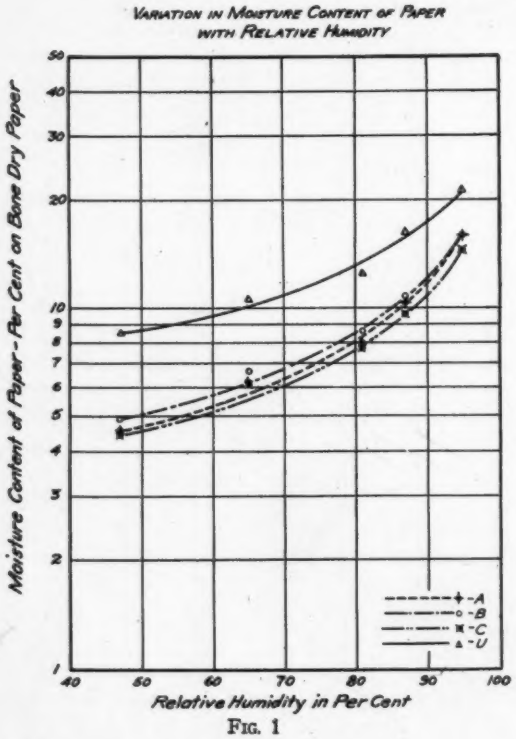

Variation in Moisture Content of Paper with Relative Humidity
Moisture Content of Paper - Per Cent on Bone Dry Paper
Relative Humidity in Per Cent
A
B
C
U

Fig. 1

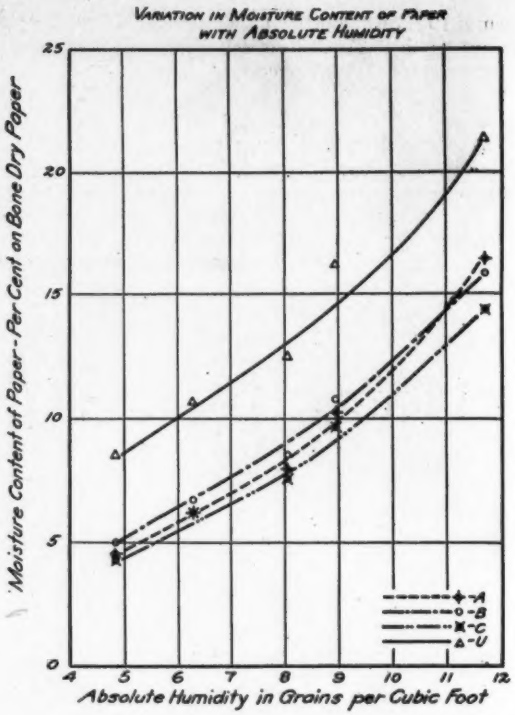

Variation in Moisture Content of Paper with Absolute Humidity
Moisture Content of Paper - Per Cent on Bone Dry Paper
Absolute Humidity in Grains per Cubic Foot
A
B
C
U

Fig. 2

(a) To control the moisture content of a highly sized loft dried paper, using more or less unlimited time, and

(b) To find out what conditions would give the best results for tensile tests for strength of paper, so that the several laboratories would carry out the tests under uniform conditions, and so be able to obtain comparable results.

Due also in part to the fact that a constant humidity chamber could be erected for a much lower cost than one where both the temperature and humidity were controlled, the tendency was to consider only relative humidity, and this tendency was emphasized due to the then insufficient knowledge of air conditioning.

Two investigators, Jerrel (*1*) and Campbell (*2*), reported that temperature had no effect on the equilibrium relationship and then described their efforts to maintain the temperature to within 0.01 degree of a constant temperature (20 deg. C.).

The first important investigator in this field seems to have been Klemm (*3*), who concluded that the moisture content of the paper varied with the absolute humidity. However, he pointed out, that even if the relative humidity were kept constant, variations in temperature or pressure would change the equilibrium relationship. He also carried out some experiments on the rate of moisture change, and found that, while it varied rapidly at first, it reached an approximate equilibrium content in a few hours, and that the rate of moisture change was practically the same for all papers.

Herzberg (*4*) during the same year reported, that below 77 deg. F. (20 deg. C.) the moisture content of paper is proportional to the relative humidity. He implies, but does not definitely state, however, that above this temperature, changes in temperature will affect the moisture content of the paper.

Klemm (*3*), on the other hand, considered that the moisture content depended on the absolute humidity and that both temperature and barometric pressure had a decided effect.

Kress and his co-workers (*5*) published the first really thorough investigation on this subject, and after testing some twenty different kinds of paper, concluded that for a given temperature the moisture content was proportional to the relative humidity. We have shown, using the same data, that a closer relation would be found between the absolute humidity and the moisture content. Our plotting of their results is shown in Figs. 1, 2 and 3.

Ross Campbell (*6*) was the next to study this subject and he concluded that the moisture content was independent of the furnish and kind of paper and was a function of the relative humidity. His figures, however, when plotted as we have done, show a closer relation to the absolute humidity.

Several investigators (*7, 8, 9*) have published work on the relation between the moisture content of the raw materials used in paper making and the atmospheric humidity. They agree that while at any given temperature the relation is one depending on relative humidity, an increase in temperature, relative humidity kept constant, decreases the moisture content.

Jarrel (*1*) investigated the variations in moisture content with changes in atmospheric humidity with the temperature kept constant at 70 deg. F. He concluded that temperature had no effect but did not give the experimental data verifying this conclusion. He did show, however, that if the paper were transferred from a condition of high humidity to a low one, a higher moisture content would be obtained than if the opposite change had been carried out.

Campbell and Pidgeon (*2*) investigated the problem using a sensitive form of apparatus, which included a thermostatically controlled bath, maintained to within 0.02 deg. C. of a standard temperature. They concluded that the moisture content of the paper was proportional to the relative humidity. This same conclusion was also reached by Seborg and Stamm (*10*).

Davis (*11*) studied the effect of changes in temperature and humidity on paper and concluded that the moisture varied with the absolute humidity. He found that if the relative humidity was kept constant, changes in temperature changed the moisture content.

In our previous work (*12*) on humidity conditions in the machine room and their effect on the moisture content of the paper made, we have concluded that the moisture content was proportional to the absolute humidity.

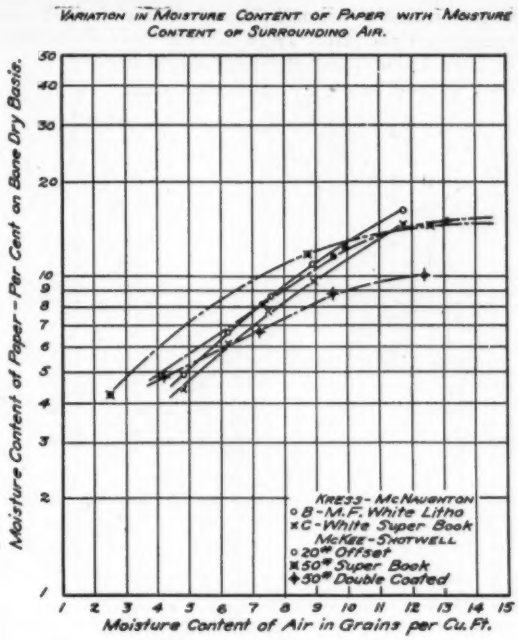

Variation in Moisture Content of Paper with Moisture Content of Surrounding Air.
Moisture Content of Paper - Per Cent on Bone Dry Basis.
Moisture Content of Air in Grains per Cu. Ft.
Kress - McNaughton
○ B - M.F. White Litho
× C - White Super Book
McKee - Shotwell
○ 20# Offset
× 50# Super Book
✦ 50# Double Coated

Fig. 3b

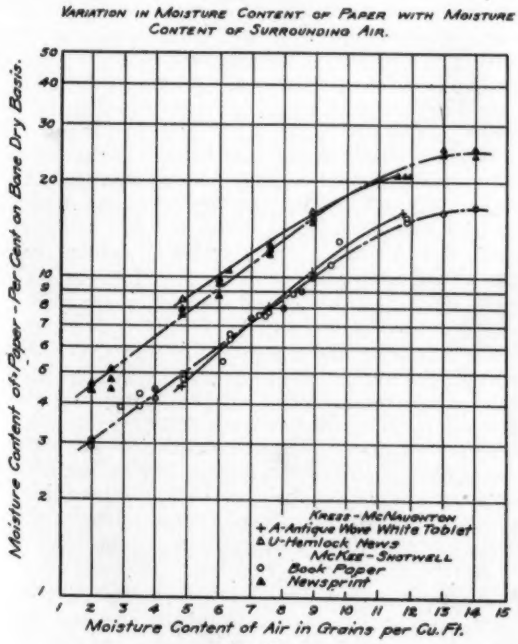

Variation in Moisture Content of Paper with Moisture Content of Surrounding Air.
Moisture Content of Paper - Per Cent on Bone Dry Basis.
Moisture Content of Air in Grains per Cu. Ft.
Kress - McNaughton
+ A - Antique Wove White Tablet
△ U - Hemlock News
McKee - Shotwell
○ Book Paper
▲ Newsprint

Fig. 3a

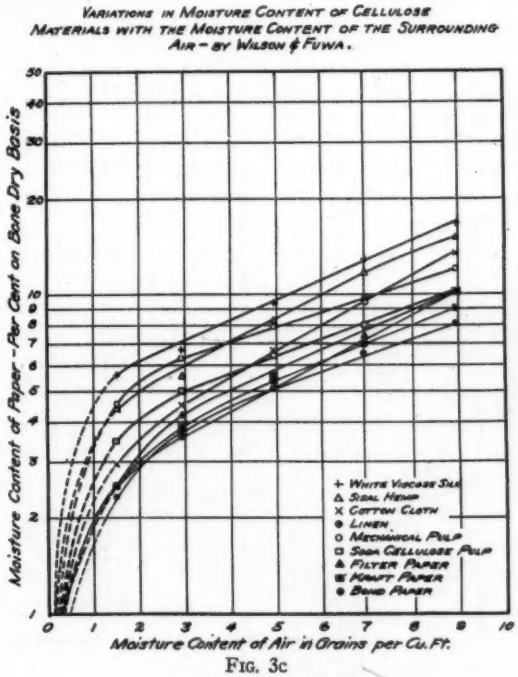

Variations in Moisture Content of Cellulose Materials with the Moisture Content of the Surrounding Air - by Wilson & Fuwa.
Moisture Content of Paper - Per Cent on Bone Dry Basis
Moisture Content of Air in Grains per Cu. Ft.
+ White Viscose Silk
△ Soul Hemp
X Cotton Cloth
● Linen
○ Mechanical Pulp
□ Soda Cellulose Pulp
▲ Filter Paper
⊠ Kraft Paper
● Bond Paper

Fig. 3c

The Relation Between the Moisture Content of the Paper and the Atmospheric Humidity at Equilibrium and the Effect of Temperature on the Same

The manufacturer and the user of paper both have a keen interest in the equilibrium between the moisture content of the paper and the humidity of the surrounding atmosphere. While this relationship has been recognized in a haphazard way by the paper manufacturer, more especially by the manufacturer of high grade paper, its importance has not been realized until very recently by the printer and other users. In most cases the only real interest has been to maintain certain standard conditions in the "test laboratory" so that comparable tests could be maintained.

However, it has been found recently, that the printing qualities of the paper are very definitely affected by the moisture content, with the optimum conditions for newsprint at about 10 per cent, so both the maker and the user are desirous of the same high moisture content. One large newsprint user has recently specified in his contracts, that the moisture content be between 8.5 per cent and 10.0 per cent.

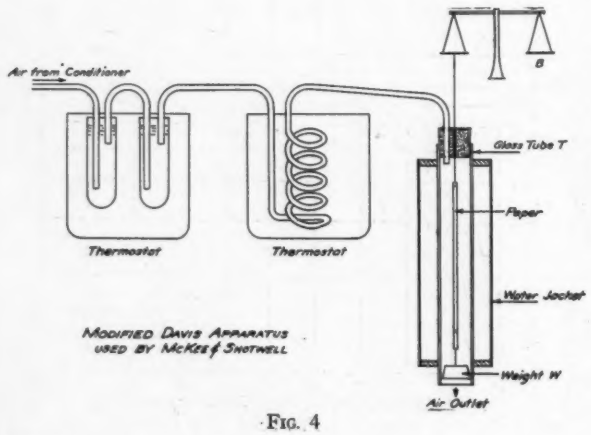
This equilibrium moisture condition is also of great importance as the basis of calculations for the process of moisture control described later.

The present investigators first replotted the existing data on the basis of absolute humidity, instead of relative humidity and found that the curve became more nearly linear, (Fig. 2). They then repeated this, plotting the logarithm of the moisture content of the paper against the absolute humidity or the moisture content of air measured as grains per cubic foot, and obtained the curves shown in Figure 3. From this it was seen that the major portion of the curve was a straight line. In general they found that for temperatures between 15 deg. C. and 30 deg. C. the moisture was proportional to the absolute humidity. They also noticed that at an absolute humidity of about fourteen grains of water per cubic foot the curve flattens out, tending to become parallel to the base. It was further found, that here the paper showed signs of wetting and that this meant, that there was an actual saturation point above which moisture would not be "sorpt," and if more moisture than the saturation content is taken up, it will be present as a "wet" surface film.

These conclusions were next investigated, using two methods to confirm these findings.

Experimental Technique:

(1) Several different grades of paper were obtained and cut into pieces approximately two grams in weight.



Modified Davis Apparatus used by McKee & Shotwell

Fig. 4

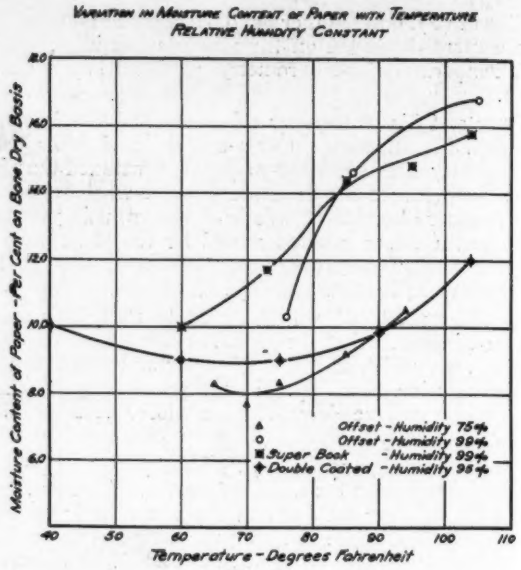

Variation in Moisture Content of Paper with Temperature
Relative Humidity Constant
Moisture Content of Paper - Per Cent on Bone Dry Basis
Temperature - Degrees Fahrenheit
Offset - Humidity 75%
Offset - Humidity 99%
Super Book - Humidity 99%
Double Coated - Humidity 99%

Fig. 5a

Three of these pieces, for each kind of paper, were taken and dried in an oven at 105 deg. C. for three hours (to constant weight), dried air being passed through the oven, the loss on weight giving the moisture content of the paper. Triplicate samples of each kind of paper were then placed in closed glass jars above aqueous solutions of definite vapor pressures and hence giving definite relative humidities. The samples were left in these jars for two weeks at various controlled temperatures at the end of which time the samples were taken out and the moisture determined, this moisture content being checked by means of the gain in weight over the original moisture control.

The second method was a modification of the Davis Method using the apparatus illustrated in Fig. 4. The apparatus consisted of a pyrex tube "T" one and a half inches in diameter and thirty-six inches long, surrounded by a water bath made of a pyrex tube four inches in diameter and thirty inches long. The two were concentric, the first apparatus built used rubber stoppers, and the second had the two tubes fused together, thereby making it a strong and rigid apparatus. The water bath was kept at a constant temperature by means of a stream of water flowing from a thermostat with constant head. The paper sample was suspended in the inner tube, by means of a fine wire passing up through a small opening in the cap to an analytic balance situated directly above the tube, and was kept taut by means of a ten gram weight suspended from the bottom of the sample.

Conditioned air was forced through the apparatus by means of a low pressure blower. The air was first humidified in a small humidifier supplied by the J. O. Ross Engineering Corporation, and after passing through the blower was further conditioned by passing through a series of three specially designed gas wash bottles, containing solutions giving air of the desired humidities. The wash bottles were contained in a thermostat and the air after first passing through a spray trap in the same thermostat, was then passed through two coils of copper tubing in the thermostat and from there to the reaction tube carrying the paper under test.

In the present investigation the results of the other workers have been replotted, using the absolute humidity as the ordinate and the logarithm of the moisture content

as the abscissa and in all cases curves in harmony with the results of the present investigation have been obtained. While the lines do not always coincide, they are straight lines of the same general characteristics; the differences are thought to be due to the different "furnishes" being used to make the paper.

The effect of temperature on the equilibrium moisture content of the paper, if the humidity was kept constant was then investigated. This was done by two methods.

(1) Five samples of the paper were taken after being allowed to hang in the room for some days and weighed in weighing bottles. Two were used for moisture determination, and the remainder put in glass desiccators, over a saturated salt solution giving a known humidity. These desiccators with their contents were then placed in thermostats, and maintained at a constant temperature for two days, when the samples were removed, weighed, returned for another day and then reweighed. If there were no change in weight, another temperature was taken and the process repeated. With the exception of one run to check Jarrel's (*1*), Urquhart's (*15*), and Walker's (*16*) observations showing the presence of a hysteresis effect, the measurements were all taken on the upward trend of temperature.

(2) Samples were similarly prepared, but run in the modified Davis outfit using a saturated solution of some salt giving a predetermined humidity at a given temperature. This temperature was maintained within 1 deg. F. in the first thermostat containing the wash bottle and one tube. The second thermostat and the water jacket were similarly maintained at the desired temperature. After running until the weight of the paper became constant, the equilibrium moisture content was determined. The temperature was then raised and the process repeated until the series was completed.

From the results obtained by replotting the existing data, and from their own experimental data the authors have concluded that:

(1) The moisture content of the paper in equilibrium with the surrounding atmosphere varies with the absolute humidity (grains per cubic foot) for temperature between 16 deg. C. and 40 deg. C. Even if the temperature is kept constant the relation between the moisture content of the paper and the absolute humidity is closer than it is to the relative humidity.

(2) Below 16 deg. C. and above 40 deg. C. variations

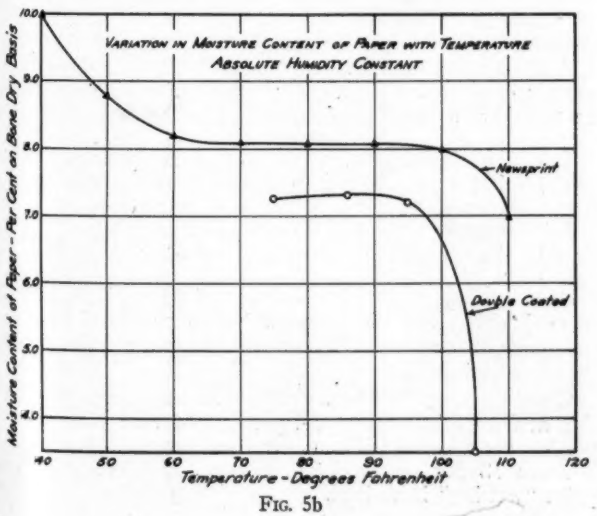


Fig. 5b

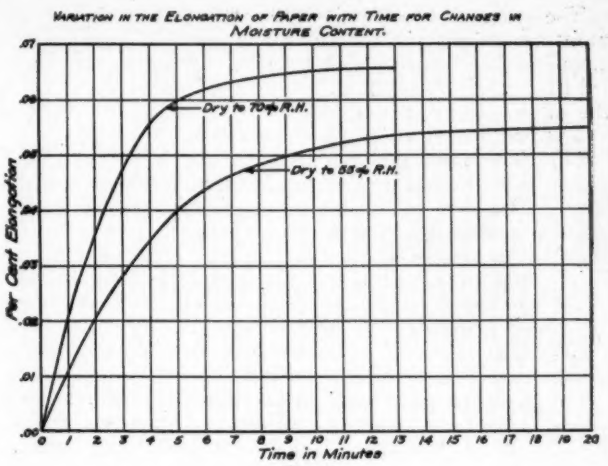

Variation in the Elongation of Paper with Time for Changes in Moisture Content.
Dry to 70% R.H.
Dry to 85% R.H.
Per Cent Elongation
Time in Minutes
.07
.06
.05
.04
.03
.02
.01
.00
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Fig. 6

in temperature materially affect the relation between the moisture content of the paper and the absolute humidity (Fig. 5b), but

(3) If the relative humidity is kept constant the moisture content of the paper materially changes with temperature throughout the whole range from 5 deg. C. to 100 deg. C. (Fig. 5a).

(4) While there is an apparent hysteresis effect on the moisture content depending upon whether it is approached from a higher or a lower content, this apparently disappears, if sufficient time is given, but in the present investigation the equilibrium has always been approached from the low side because the rate of pick up is greater than the rate of drying, and because in practice this is the usual case involved.

Rate of Moisture Change

After determining the moisture content of paper in equilibrium with the surrounding atmosphere, the next step taken was to find the rate at which the paper would change its moisture content if exposed to an atmosphere producing a different content. While it has been known that this change is sometimes rapid, measurements on the actual rate of moisture change have been lacking and in most cases the meaning of "rapid" has been a very nebulous one.

Klemm (*3*) published the first paper dealing with this subject. In it he shows his results in several curves and concludes that while the initial rate of moisture change is rapid the equilibrium is reached in a few hours, and also that practically all papers have the same rate of moisture pick up.

H. S. Davis (*11*) and R. C. Griffin (*17*), studying the effect of changes in atmospheric humidity on the stretch of paper used for lithographic work, indirectly measured the rate of change of moisture content. They measured the rate of change of stretch with changes in humidity and obtained the curves shown in Fig. 6. From the work of Houston, Carson, and Kirkwood (*8*) we can obtain the approximate figure for the rate of moisture increase. The result given shows in Figs. 6 and 7 that, while the rate of moisture change is very rapid for the first few minutes, it then falls off rapidly and a condition of approximate equilibrium is reached in about two hours. By using a combination of the methods of these two sets of workers we could determine the rate of moisture pick up for fibrous materials, such as paper, but we should have two sets of experimental results for each determination, and hence two sources of errors.

The original investigations showed that a change in moisture content of as much as five per cent could be accomplished in less than five seconds. This discovery then led to a more thorough investigation of the problem with the results shown in the accompanying tables and curves.

For this investigation three methods were used:

(1) The exposure of a weighed sample of paper, of known moisture content in an atmosphere of high humidity for an accurately timed period and the measuring of the gain in weight.

(2) The use of the modified Davis apparatus taking rapid readings of the gain in weight of the sample and at the same time accurately reading the time of exposure.

(3) The use of the semi-commercial apparatus described in the last portion of this paper, where a web of paper of known moisture content was passed through a humid atmosphere at a definite rate, and hence in a definite predetermined time, and the moisture pick up recorded.

These three methods were used to check each other. A surprisingly good agreement between the three was obtained.

It was found that paper changed in moisture rapidly at first, but after a short time the rate fell, the cure of moisture content plotted against time tending to become asymtotic to some maximum. The results show that an approximate equilibrium will be reached in about three hours, this point being close enough to the actual one for most practical purposes, though the actual equilibrium content may take days or even weeks to be actually attained.

We then plotted the rate of moisture change against the difference in the moisture content actually present and that which will be present at equilibrium. The curves shown in Fig. 8 were obtained.

These curves show that the rate of moisture change is rapid for conditions that give an equilibrium content materially different, being in some cases as high as two per cent per second; while it becomes exceedingly small (less than 0.001 per cent per second) when a very small moisture differential is the case.

It was further found that if moisture laden air were blown against the paper, impinging on the surface at a high velocity, the rate of moisture pick up could be increased and finally that the rate of drying is materially less than the rate of pick up.

Theoretical Discussion

An investigation of the graphs showing the relationship between the moisture content of paper and the absolute humidity of the air in which the paper is conditioned reveals several interesting facts. In general a straight line

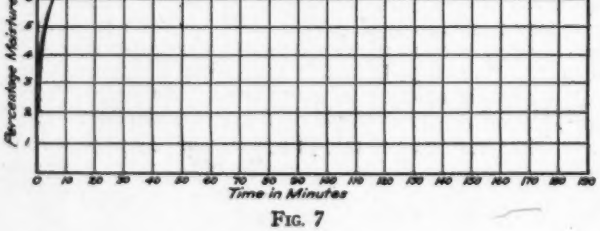


Fig. 7

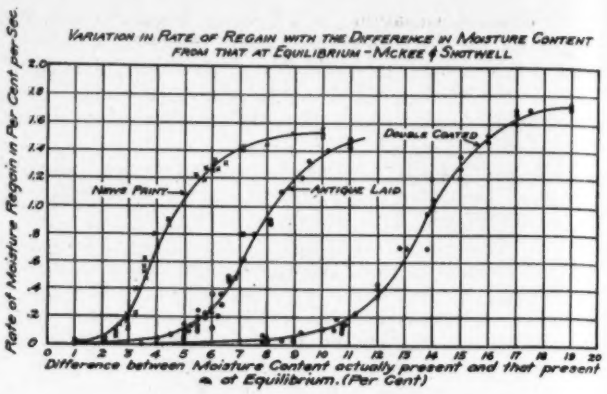

Variation in Rate of Regain with the Difference in Moisture Content from that at Equilibrium - McKee & Shotwell
Rate of Moisture Regain in Per Cent per Sec.
News Print
Antique Laid
Double Coated
Difference between Moisture Content actually present and that present at Equilibrium. (Per Cent)

Fig. 8

relationship is found to occur in the range of three to ten grains of water per cubic foot of air; above and below this range this straight line relationship does not hold.

The following is offered as a possible explanation of these observations:

It is well recognized that there are very marked changes in the physical properties of paper at a moisture content of 3 per cent, determined by the usual standard method. Below this moisture content the strength of the paper is markedly less. Jentgen (*18*) and Herzog (*19*) have reported that if cellulose is dried to a moisture content of less than three per cent it will dehydrate all the known drying agents including calcium chloride, concentrated sulfuric acid, and even phosphorus pent-oxide, but it will not dehydrate air-dried cellulose. Is it not possible that at this point there is no free water, but that the remaining three per cent is some form of water constitution, which can only be removed with the formation of anhydride bodies during the drying process? When the cellulose takes up moisture from oven-dryness it is quite possible that the first stage is the hydration of these anhydride-like bodies and after this has been accomplished the cellulose will regain its original properties.

The next stage in the sorption of water by cellulose might be the formation of a monomolecular layer of water over the surface of the cellulose along the lines suggested by Langmuir (*20*), Patrick (*21*), Holmes (*22*), Barrie (*23*), Barrett (*24*) and others working on the sorption of vapors and liquids by various surfaces. After the greatest possible cellulosic surface had been covered by a monomolecular layer of water we might expect to find that any additional water would give a wet appearance. The greatest possible surface for a given weight of cellulose should be that for the total surfaces of the micelles, assuming:

(a) the usual figures for the size of the water molecule
(b) that a grid lattice is formed by the water molecules occurring in a monomolecular layer
(c) that the molecular weight of water is 18
(d) that the density of cellulose is 0.85.

Clark's (*25*) dimensions for the cellulose micelles used in conjunction with the above assumptions would lead us to expect, that at about 18 per cent of water in the paper "wetting" would appear.

On comparing the above theory with the curves we find that at from 2.5 per cent to 4 per cent of water in the paper we get a change in curvature and another at a point between 18 per cent and 25 per cent. Above the latter point "wetting" is noticed.

While these variations are large it should be remembered that the material being investigated is paper, a commercial product with many impurities such as lignin, size, loading, etc. and not pure cellulose.

This theory, with the qualifications above mentioned being borne in mind, is submitted simply as a possible suggestion of why these two changes in curvature occur on the curve showing the variation of the moisture content in the paper with absolute humidity, but not as a definite explanation, and it must also be realized that in using paper as the material to be investigated we could not obtain accurate enough data to prove such a hypothesis.

Comparing these results in a tabular form we obtain the following:

Reason	Calculated H_2O %	Content observed %	Reason for differences
(a) Monomolecular layer on micelles	18	18 to 25	Sizing, loading and
(b) Excess water showing wet	18	above 18 to 25	presence of lignins

The use of relative humidity as the governing factor in the relationship between the moisture content of the paper and that of the surrounding air, and the assumption that temperature has no effect, is at variance with all other work on sorption. The use of relative humidity in place of the moisture content of the atmosphere has seemingly been due to the use of partial pressure as a measure of the concentration of one gas in another, overlooking the work of Patrick (*21*), Holmes (*22*) and others on the sorption of vapors by capillary substances such as silica gel, etc. These investigators showed that the sorpt material was present in a form similar to that which would occur if it were under high pressure, for instance water sorpt by silica gel has a boiling point equivalent to that under approximately 10 atmospheres.

Gibbs (*6*) and many other investigators on sorption have shown that the amount sorpt varies with the concentration of sorpt material in the solution. Hence the concentration of the water in air should be measured, not the ratio that the amount present is to the amount that would be present if the air were saturated.

The experimental data as previously pointed out show that the amount sorpt varies with temperature, but that this variation is less when the concentration of the water in the atmosphere is used rather than when relative humidity is used.

If we now consider the curves showing the amount of moisture regain plotted against time, we find that after the first 3 per cent has been taken up they have the same general shape as those obtained by Barrie (*23*), and Barrett (*24*) for the sorption of water on a gold surface.

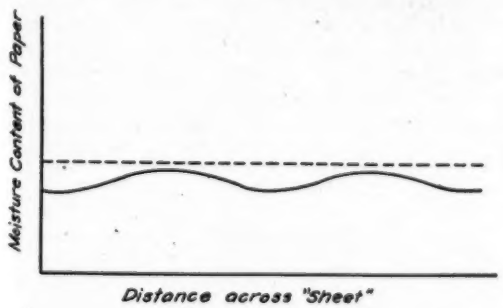


FIG. 9

Moisture content from driers.
Moisture content after passing through conditioner.

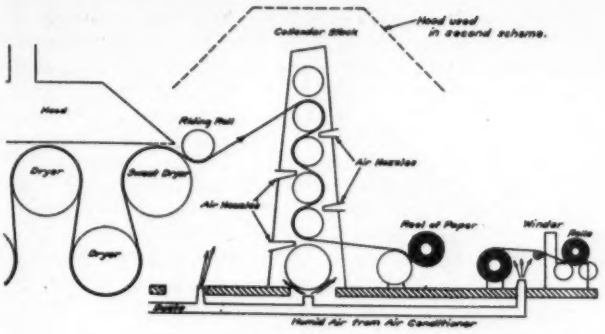


FIG. 10

They found that the curve obeyed the equation

$$W = e^{\left(a' - \frac{b'}{t^{c'}}\right)}$$

or

$$\ln W = a' - \frac{b'}{t^{c'}}$$

or

$$\log W = a - \frac{b}{t^{c}}$$

in which

a, b, and c are empirical constants

W = weight of water sorpt

t = time.

Such a curve would be exponential and such has been found to be the case for cellulose.

For the curve shown in Fig. 7 these constants would be about:

a = 9

b = 8.523

c = 0.0165

In the case of the curves for cellulosic materials, we find that we have several stages, with constants for each stage and that a whole curve is a combination of those curves for each stage. This is possibly more fully realized by an examination of the curves showing the rate of moisture regain plotted against the difference between the moisture actually present and that at equilibrium (Fig. 8).

These facts explain to a large extent the hysteresis effects noted by Walker (16) and others (1 and 15) for even after several days, and possibly weeks, the true equilibrium was not obtained.

Industrial Application

The results obtained during this research have an industrial application in the rapid conditioning of paper taking seconds instead of minutes to accomplish the desired result. This process enables the paper to be conditioned either during the manufacture, while traveling at high rates of speed, at the supercalenders, rewinders, or on the presses where it is being used.

It has been found that when the moisture content of paper lies between 8½ and 10 per cent the best results are obtained. The strength and the printing qualities are found to be the best between these values. If the paper is too dry the "cuts" will be blurred and the ink will have a tendency to "strike-through" to the other side of the sheet, while the paper is too wet, the cuts, etc. will "show through."

Another valuable property that paper possesses when the moisture quantity is within these limits is that the tendency to "buckle" and "wave" or otherwise distort during storage is lessened.

The manufacturer has to meet specifications requiring a moisture content within the above limits. This is to his

advantage since water costs practically nothing, while paper making fibers are valuable. In the days before 1923, when the machines were narrow, less than 190 inches wide, and slow, traveling at speeds less than 800 feet a minute, and where the machine rooms were not properly ventilated this was not so difficult, but with the high speed machines and well ventilated machine rooms of today, better methods of controlling the moisture content have become necessary. The methods in use up to the present time have not been successful, however, in giving consistently uniform moisture content across the sheet and particularly when high speed machines of the latest design are used.

When paper is dried by the customary methods, so that the average moisture across the sheet is within the required limits, it will not be uniform, but will vary in some manner such as that shown by the solid line in Fig. 9. If the paper is first slightly overdried and then conditioned, by passing rapidly through an atmosphere containing about 17 grains of water per cubic foot at 95 deg. F., the moisture content will be increased and the variations reduced, because the greatest "pick up" will occur where the original moisture content is least and vice versa giving a sheet similar to that shown by the dotted line in Fig. 9. The time required will be only a few seconds, not the five or ten minutes needed if temperatures in the vicinity of 150 deg. F. are used.

This method for controlling the moisture content is more flexible than the others, in that it can be applied either before or after the calenders, both before and after, at the supercalenders, winders, or even at the presses. If the conditioning takes place before calendering a higher finish is obtainable without the present tendency to "blacken" occurring which happens if the paper is simply dried down to the desired moisture content. The "blackening" occurs, when paper with wet streaks containing hot water inside the cellulose fibers is calendered and the breaking of these fibers gives an appearance of dark streaks to the paper. However, if the new method is used this water is removed from the cellulose fibers and then replaced as a cool monomolecular film that does not crush the fibers.

When a bulking paper with a mat finish is desired the paper must be calendered dry, under 4 per cent moisture content, or else the fibers will be ironed down smooth, giving a denser paper having a finish higher than desired. The desired result is obtainable by calendering with this low moisture content, but this paper unless carefully conditioned before packing is liable to damage by warping and buckling in storage or transit. Such conditioning can be given such paper by this new process before it is wound or cut or otherwise "finished."

The third advantage that it has in the paper mill lies in the conditioning during the supercalendering, necessary to papers requiring high finish. This paper has to be handled moist. The required moisture must be taken up by sorption, and not be free water contained in the interstices of the fibers. The method evolved by the authors provides a means of doing this rapidly without the danger of spotting the paper, as frequently happens when either steam or water sprays are used.

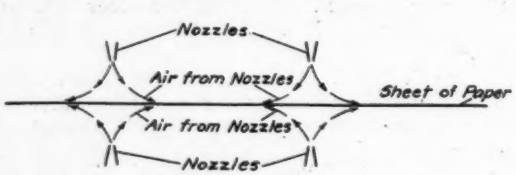


Figure 12

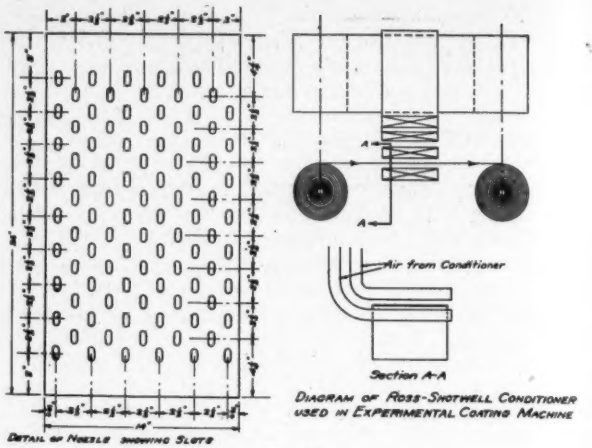


Diagram of Ross-Shotwell Conditioner used in Experimental Coating Machine

Fig. 11

This method was used first on a newsprint machine 234 inches wide running at 850 feet a minute and making about 110 tons of paper a day. The general layout of this apparatus is shown diagrammatically in Fig. 10. When first installed the hood shown in the diagram was not used; however, this method gave rather undesirable room conditions due to the large volume of humid air that was blown into it. Improvement in the room condition was noticed when a hood was placed over the calenders and this hood fitted with an exhaust fan so that the ventilation was better. The efficiency of this whole arrangement was low due to the quantity of air used that did not come into contact with the paper, and thus later improvements were made to increase the efficiency and to cut down the amount of air required and the time necessary to carry out the conditioning.

In the first installations, which were made as has been pointed out on machines making about 110 tons a day, 10,000 cubic feet of air containing 17 grains of water per cubic foot at a temperature of 95 deg. F. were blown up through the slots in the floor and also through some nozzles directing it onto the paper at the calenders. The calenders were thus surrounded by an atmosphere of humid air through which the paper took approximately three seconds to pass. It was found that the moisture content of the paper increased about 3 per cent or for a moisture content of 5½ per cent to one of 8½ per cent during this short interval of time, and at the same time a better finish was obtained.

It should be noted here, that this improvement in moisture content was made during an interval of three seconds instead of the five to ten minutes necessary if the usual method of conditioning the paper were used and also it had been found, that if either wet dandy rolls or steam sprays were used on the paper after it left the driers and before calendering no increase in moisture was obtained.

The second arrangement was used on a machine making coated paper 24 inches wide. This layout consisted of two rectangular ducts with perforations on the sides between

Figure 13
Section thru Apparatus using Venturi Throats.

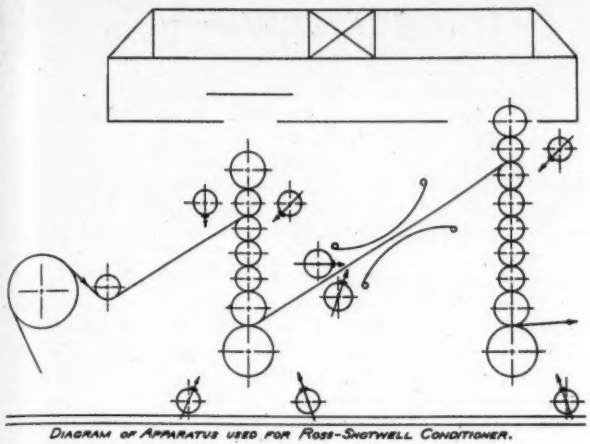


DIAGRAM OF APPARATUS USED FOR ROSS-SHOTWELL CONDITIONER.

FIG. 14

which the paper passed. These are shown in Fig. 11. The air from these ducts was given with a velocity so that not only did it impinge on the sheet, but spread as shown in Fig. 12. This scheme was more effective than the first one and a rate of moisture pick up as high as 3 per cent per second was obtained. This has been discarded for use on high speed, wide machines due to several reasons, one of which is the difficulty in passing the paper through the space between the ducts, and a second the danger of causing ripples in the paper, leading to breaks.

The most recent design includes a tube of rectangular cross-section whose vertical longitudinal section is venturi in shape. The paper passing through this tube as shown in Fig. 13. The condensed air is blown into the tubes from the ducts A-A in such a manner that it will impinge on the paper and tend to blow it into the throat. The shape of the apparatus then forces the air into contact with the paper and the used air is removed by means of the exhaust ducts B-B. A longer effective time of application is obtained by the use of air jets around the calenders, greater efficiency is obtained through this design because most of the humid air is in contact with the paper and the proportion of non-effective air reduced considerably. At the same time this modified venturi assists in eliminating ripples formed in the earlier parts of the paper making process and is of such design that the paper passes through it easily.

TABLE I

VARIATION IN THE MOISTURE CONTENT OF PAPER WITH THE MOISTURE CONTENT OF THE SURROUNDING AIR

(A) KRESS & McNAUGHTON

	Moisture Content of Paper for Air at				
Relative humidity	47%	65%	81%	87%	95%
Temperature	78°F.	76°F.	75°F.	78°F.	84°F.
Gr./cu. ft.	4.83	6.28	8.07	8.94	11.75
Paper					
A	4.5	6.1	7.9	10.5	16.0
B	4.6	6.3	8.0	10.2	16.9
	4.8	6.6	8.4	10.7	15.9
	5.0	6.7	8.6	10.8	16.0
C	4.5	6.1	7.7	9.6	14.4
D	5.7	7.1	9.3	11.3	17.0
	5.7	7.2	9.3	11.4	16.8
U	8.5	11.1	12.5	16.3	21.1
	8.6	10.2	12.5	16.1	21.5

Sample No.	Kind	Furnish Sulphite	Soda	Rosin	Alum	Clay
A	Antique Wove White Tablet	51%	49%	1.4%	3.5%	13.3%
B	M. F. White Litho....	59	41	1.4	4.0	13.3
C	White Super Book.....	38	62	1.4	2.6	27.2
D	Laid Book	50	50	....	....	....
		Sulphite Mechanical				
U	Hemlock News	30	70	....	....	....

(B) WILSON & FUWA

MOISTURE CONTENT OF CELLULOSIC MATERIAL AT VARIOUS ABSOLUTE HUMIDITIES

		Temperature 25 deg. C. (77 deg. F.)				
Absolute humidity gr./cu. ft.		1.49	2.99	4.98	6.97	8.97
Material	Source					
Cotton cloth	Sheeting	2.99%	4.56%	6.7%	9.7%	13.5%
Linen	Table linen	2.53	5.60	5.1	7.0	10.2
Jute	Average, several grades	4.33	6.9	10.2	14.4	20.2
Sisal hemp	Strands from rope	4.48	5.6	8.3	11.7	15.1
Manila hemp	Strands from rope	4.25	5.6	8.5	11.7	16.0
White viscose		5.6	6.7	9.4	12.9	16.8
Red viscose		5.3	6.4	9.0	11.8	15.2
Mechanical pulp, pine.....		4.55	6.3	7.9	9.5	12.0
Soda pulp, unbleached.....		3.49	5.0	6.6	8.0	10.2
Kraft paper	60# brown kraft	2.50	3.85	5.4	7.0	9.2
Bond paper	"Manifest" bond	2.54	3.71	5.1	6.5	8.1

TABLE II

VARIATION IN MOISTURE CONTENT OF PAPER WITH TEMPERATURE ABSOLUTE HUMIDITY CONSTANT

News Print—5 Gr. Per Cu. Ft.

Temperature Deg. F.	Moisture Content Per Cent
40	10.0
50	8.8
60	8.2
70	8.1
80	8.15
90	8.1
100	8.0
105	7.0
Offset 7.25 Gr. Per Cu. Ft.	
76	7.25
86	8.32
94	7.20
104	3.57

TABLE III

VARIATION IN THE MOISTURE CONTENT OF PAPER WITH THE MOISTURE CONTENT OF THE AIR

McKee & Shotwell

Moisture Content of Air In Gr./Cu. Ft.	Moisture Content of Paper. Per Cent Based on Bone Dry Paper
News Print	
2.0	4.45–4.70
2.55	4.5–4.80–5.05–5.2
4.80	7.7–8.0
6.00	8.8–9.7–9.9
7.58	12.0–12.3
8.92	15.0–15.6
11.85	21.0–21.0
13.0	25.0–25.0
14.0	24.5–25.5
Book Paper	
2.0	3.10–3.00
2.95	4.00
3.5	4.00–4.35
4.0	4.20–4.45
4.85	4.80–5.00
6.08	5.50
6.30	6.40–6.60
7.00	7.45
7.25	7.50
7.50	7.50
7.6	7.8–8.0
8.0	8.0
8.25	8.75
8.56	9.00
8.95	10.0–10.4
10.0	11.0
10.25	13.0
11.85	15.0–15.5
13.0	16.5
14.0	17.0
4.65	4.81
7.34	8.19
9.60	11.31
9.90	12.10
13.08	14.61
20.85	16.82
50 Lb. Double Coated	
4.15	4.81
9.56	8.72
7.22	6.69
12.97	10.00
50 Lb. Super Book	
2.50	4.25
8.75	11.69
12.70	14.20–14.45
17.07	14.40
22.07	15.80

TABLE IV

Kind of paper	Time of Contact	Moisture in Sheet	Oz. Wt. of Roll	Gain in Moisture		
				Oz.	Per Cent Actual	Per Cent Expected from Fig. 5
Double coated	1.3 sec.	7.5	128	1	0.6	0.8
" "	1.3 "	7.5	120	1	0.8	0.8
" "	1.0 "	7.5	159	1	0.6	0.7
" "	1.3 "	5.5	86	3	1.8	1.8
Hanging paper	1.0 "	7.5	265	3	1.1	1.2
" "	1.0 "	7.5	138	2	1.2	1.2
" "	1.2 "	7.5	197	3	1.4	1.4
News print	1.3 "	6.0	190	4	2.1	2.0
" "	1.3 "	6.0	180	2	1.5	2.0
" "	1.3 "	7.7	191	2	1.2	1.3

TABLE V

EXPERIMENTAL RESULTS—RATE OF MOISTURE REGAIN

Kind of Paper	Difference in Moisture Present from Equilibrium H_2O Per Cent	Rate of Moisture Regain in Per Cent Per Second			
					Average
News print paper	1.0	.02	.02	.00	.01
" " "	2.1	.04	.05	.05	.05
" " "	2.5	.08	.10	.07	.08
" " "	2.9	.20	.21	.18	.20
" " "	3.5	.48	.45	.52	.48
" " "	4.4	.91	.89	.86	.89
" " "	6.0	1.25	1.30	1.25	1.27
" " "	7.1	1.41	1.40	1.43	1.41
" " "	10.0	1.50	1.53	1.55	1.53
Antique laid paper	1.0	.00	.00	.00	.00
" " "	3.5	.00	.00	.00	.00
" " "	5.0	.06	.05	.08	.06
		.09	.13	.09	.10
" " "	5.5	.14	.10	.12	.12
		.18	.20	.24	.21
" " "	6.0	.22	.24	.26	.24
" " "	6.6	.45	.50	.47	.46
" " "	7.0	.80	..	..	.80
" " "	8.1	.90	.88	..	.89
" " "	11.0	1.46	1.42	1.48	1.46
Double coated	4.0	.00	.00	.00	.00
" "	7.9	.02	.02	.08	.04
" "	9.0	.02	.02	.06	.03
" "	10.8	.10	.12	.13	.12
" "	12.0	.40	.35	.43	.40
" "	13.8	.70	..	..	.70
" "	15.0	1.20	..	..	1.20
" "	17.0	1.60	1.70	1.70	1.66
" "	19.0	1.70	1.72	1.74	1.72

TABLE VI

VARIATION IN MOISTURE CONTENT OF PAPER WITH TEMPERATURE RELATIVE HUMIDITY CONSTANT

Offset Paper

Temperature	Moisture Content
75% Relative Humidity	
70° F.	7.7%
75	8.3
85	9.2
94	10.5
99% Relative Humidity	
76	11.3
86	14.6
105	16.8
50 Lb. Double Coated—99%	
60	10.0
675	11.7
95	14.4
104	15.7
103	14.0
133	15.0

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TAPPI Notes

The Executive Committee of the Technical Association has announced the appointment by President Abrams, of the following Management Division chairmen for the current year:

Management Division: General Chairman, W. M. Shoemaker, Secretary, National Vulcanized Fibre Company, Yorklyn, Delaware, to succeed W. R. Maull, Vice President, Dill & Collins, Inc., who was elected to the Executive Committee.

Education Committee: Chairman, Harold G. Noyes, Coordinator for Pulp and Paper Education, Wisconsin Vocational School, Appleton, Wisconsin, (reappointed).

History and Biography Committee: Chairman, Ralph M. Snell, President, Huntington Paper Company, Huntington, Massachusetts (reappointed).

Management Methods Committee: Chairman, Herman L. Joachim, Assistant to President, Package Paper Company, Holyoke, Massachusetts, to succeed W. M. Shoemaker.

Patents Committee: Chairman, Charles W. Rivise, Patent Attorney, 1321 Arch Street, Philadelphia, Pennsylvania, (reappointed).

Waste Committee: Chairman, Clarence M. Baker, Engineer, American Paper and Pulp Association, 2 S. Carroll Street, Madison, Wisconsin, (reappointed).

Leo J. Rioux, formerly night superintendent of Restigouch Company, Ltd., Atholville, N. B., is now sulphite superintendent at Fraser Companies, Ltd., Edmundston, N. B.

The Forest Products Laboratory, Madison, Wis., has completed its study of the Sandberg (Swedish) sheet machine, which was loaned to it by the Swedish manufacturers. It is planned to return this machine to Sweden by August 20 unless some company in the United States may wish to purchase it. Detailed information concerning the machine may be obtained from P. K. Baird at the Forest Products Laboratory.

Papeteries Aubrey Joins TAPPI

The most recent addition to the list of progressive companies making up the corporate membership of the Technical Association of the Pulp and Paper Industry is Papeteries Aubrey of Croisset, France, manufacturers of white and brown packing papers. Papeteries Aubrey is equipped with two 150 cm. and one 205 cm. machines and is noted for the high quality of its product and its leadership in the French paper industry. The company will be represented in the Technical Association by Henri Breton, general manager.

British Paper Mills More Active

Reports to the Department of Commerce state that the British paper market has shown a greater liveliness during recent weeks. This improvement has been general throughout all classes. Kraft, writing, and board mills are particularly mentioned as being well employed at the present time. So far prices have continued to lag behind the increase in output. Wood pulp prices have been somewhat stronger recently and it is hoped that paper prices will soon follow suit.

F. J. Rooney Goes With Paper Boards, Inc.

Fred J. Rooney is now superintendent of the Paper Boards, Inc., mill at 2535 W. Taylor street, Chicago, formerly the Kellogg Paper Products mill. The mill is being put into shape for the manufacture of board and specialties.

Index, Technical Section, Paper Trade Journal, Vol. 96

January to June, 1933

Prepared by Clarence J. West, Chairman, Committee on Abstracts and Bibliography, TAPPI

The page numbers in the following index refer to the continuous paging of the Technical Section and have no relation to the paging of the individual numbers of the PAPER TRADE JOURNAL.

References to the abstracts are preceded by the letter A and those to the patents by the letter P. Other entries refer to original articles appearing in the Technical Section; the author entries for these articles are given in capitals. No author entries are given for the abstracted articles or patents.

To Facilitate Reference

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Waterfalls Paper Co. Resumes

MECHANICS FALLS, Me., Aug. 5, 1933.—The Waterfalls Paper Company has resumed operations after a shut down of more than a month. C. S. Davis, superintendent of the plant announced yesterday, that the company would recall nearly the entire crew. The superintendent stated that due to the quantity of orders received, the company had issued orders to recall a majority of the crew at work when the plant was closed. All four paper making machines in the plant are in operation.

Mt. Vernon Strawboard Mill Resumes

[FROM OUR REGULAR CORRESPONDENT]

MT. VERNON, Ind., Aug. 5, 1933.—Fifty former employees probably will go to work this week at the plant of the Mt. Vernon Straw and Paper Board Company, when the Alton Paper and Box Board Company, lessee of the factory begins operations of one of the two machines. Men have been engaged in putting the plant in readiness for operation for the last three weeks. B. W. Stevens is manager.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING AUGUST 5, 1933

CIGARETTE PAPER

Standard Products Corp., Champlain, Havre, 64 cs.

WALL PAPER

F. J. Emmerich, Laconia, Liverpool, 1 truss; F. J. Emmerich, American Trader, London, 1 cs.; R. F. Downing & Co., Berengaria, Southampton, 1 cs., 1 ble.

NEWS PRINT

International Paper Co., Humberarm, Corner Brook, 4,046 rolls; ——, Bergensfjord, Oslo, 90 rolls; W. H. Bell, Markland, Liverpool, N. S., 4,727 rolls; Perkins Goodwin & Co., Augsburg, Bremen, 98 rolls; Perkins Goodwin & Co., St. Louis, Hamburg, 334 rolls, Baldwin Paper Co., New York, Hamburg, 110 rolls; Perkins Goodwin & Co., New York, Hamburg, 148 rolls; Jay Madden Corp., Scanstates, Kotka, 656 rolls.

PRINTING PAPER

P. C. Zuhlke, Minnewaska, Antwerp, 12 crates; Ozalid Corp., Leerdam, Rotterdam, 34 cs.; Japan Paper Co., American Trader, London, 5 cs.; Ozalid Corp., New York, Hamburg, 13 cs.

WRAPPING PAPER

F. C. Strype, Minnewaska, Antwerp, 5 cs.; Isabella Sugar Co., Minnewaska, Antwerp, 7 cs.; Pollis, Inc., Pr. Harding, Hamburg, 1 cs.

PACKING PAPER

Wilkinson Grey & Co., Minnewaska, Antwerp, 143 bls.

FILTER MASS

P. H. Petry & Co., New York, Hamburg, 80 bls., H. Reifenberg, New York, Hamburg, 100 cs., 40 bls.

FILTER PAPER

J. Manheimer, Minnewaska, Antwerp, 42 bls., 1 cs.; H. Reeve Angel & Co. Inc., American Trader, London, 13 cs.; H. Reeve Angel & Co. Inc., Olympic, Southampton, 7 cs.; E. Fougera, Champlain, Havre, 32 cs.

DRAWING PAPER

H. Reeve Angel & Co. Inc., American Trader, London, 1cs.; Devoe & Raynolds Co., Champlain, Havre, 5 cs.

COATED PAPER

Chas. Happel, New York, Hamburg, 11 cs.

SURFACE COATED PAPER

Gevaert Co. of America, Minnewaska, Antwerp, 46 cs.; Globe Shipping Co., Augsburg, Bremen, 25 cs.

METAL COATED PAPER

Globe Shipping Co., New York, Hamburg, 10 cs.; K. Pauli Co., New York, Hamburg, 22 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Laconia, Liverpool, 21 cs. (duplex); B. F. Drakenfeld & Co., Laconia, Liverpool, 20 cs. (simplex).

DECALCOMANIAS

Sellers Transportation Co., New York, Hamburg, 7 cs.

TISSUE PAPER

W. J. Byrnes, Berengaria, Southampton, 1 cs.

ENVELOPES

Beckhard Simfred Co., New York, Hamburg, 6 cs.

CARD BOARD

Brooks Paper Co., Scanstates, Stettin, 40 cs.

PASTE BOARD

J. Dun Sons Co., New York, Hamburg 15 cs.

STRAW BOARDS

C. B. Hewitt Bros., Leerdam, Rotterdam, 640 pkgs.; Crown Paper Box Co., Leerdam, Rotterdam, 1,604 pkgs.

MISCELLANEOUS PAPER

Richardson Bros., Laconia, Liverpool, 1 cs.; R. U. Delapenha, Pr. Adams, Marseilles, 1 cs.; Van Oppen & Co., Pr. Adams, Marseilles, 10 cs.; Keller Dorian Paper Co., Champlain, Havre, 2 cs.; American Express Co., Conte de Savoia Genoa 1 cs; H. Reeve Angel & Co. Inc., Scanstates, Kotka, 1 cs.; Keuffel & Esser Co., Pr. Harding, Hamburg, 41 cs., 26 rolls.

RAGS, BAGGINGS, ETC.

G. W. Millar & Co., United States, Oslo, 35 bls. new cuttings; Chase National Bank, United States, Copenhagen, 74 bls. bagging; ——, Serbino, Newcastle, 178 bls. rags; ——, Serbino, Newcastle, 95 bls. bagging; ——, Lehigh, Dundee, 153 bls. paper stock; Leigh Textile Co., Black Heron, Antwerp, 408 bls. cotton waste; Empire Fiber Co. Inc., Black Heron, Antwerp, 102 bls. cotton waste; ——, Leerdam, Rotterdam, 48 bls. rags; ——, Leerdam, Rotterdam, 270 bls. bagging; J. Cohen Son Co., Leerdam, Rotterdam, 13 bls. rags; J. Cohen Son Co., Laconia, Liverpool, 26 bls. rags; Banco Coml Italiane Trust Co., American Trader, London, 15 bls. paper stock; ——, American Trader, London, 18 bls. paper stock; J. Cohen Son Co., American Trader, London; 26 bls. rags; Castle & Overton, Inc., American Trader, London, 81 bls. waste paper; O. Segal, Orizaba, Havana, 554 bls. rags; ——, City of Flint, Liverpool, 64 bls. bagging; Chase National Bank, City of Flint, Liverpool, 239 bls. paper stock; ——, City of Flint, Liverpool, 163 bls. paper stock; E. J. Keller Co. Inc., City of Flint, ——, 135 bls. bagging; G. A. Henshaw, City of Flint, Manchester, 140 bls. rags; Castle & Overton, Inc., City of Flint, Manchester, 224 bls. rags; Amtorg Trading Corp., A. Leonhardt, Leningrad, 756 bls. rags; ——, Cameronia, Glasgow, 15 bls. rags; —— Quaker

City, Dundee, 217 bls. paper stock; ——, Quaker City, Leith, 135 bls. bagging; ——, Quaker City, Leith, 114 bls. rags; ——, Quaker City, Leith, 207 bls. bagging; Johns Manville Co., Scanstates, Stettin 95 bls. rags; Amtorg Trading Corp. Scanstates, Leningrad, 51 bls. rags; ——, Exermont, Naples, 1,042 bls. rags; ——, Estrella, Alicante, 152 bls. rags; Bank of N.Y. Trust Co., Estrella, Valencia 325 bls. rags; ——, Estrella, Barcelona, 171 bls. rags; Obrien & Padwer, Inc., Estrella, Barcelona, 140 bls. rags; ——, Estrella, Barcelona, 77 bls. bagging; Bank of N. Y. Trust Co., Estrella, Barcelona, 392 bls. rags; E. J. Keller Co. Inc., Estrella, ——, 54 bls. rags; E. J. Keller Co. Inc., Anna Maersk, ——, 20 bls. flax waste; E. J. Keller Co. Inc., Anna Maersk, ——, 400 bls. rags.

CASEIN

Casein Manfg Co., Southern Cross, B. Ayres, 1,050 bags; American & British Chemical Supplies, Southern Cross, B. Ayres, 1,458 bags; Champion Coated Paper Co., Southern Cross, B. Ayres, 834 bags; D. C. Andrews & Co., New York, Hamburg, 70 bags.

OLD ROPE

——, Serbino, Newcastle, 53 coils; W. Steck & Co., Black Heron, Antwerp, 61 coils; W. Steck & Co., Leerdam, Rotterdam, 63 coils; Bank of N. Y. Trust Co., Laconia, Liverpool, 116 coils; A. S. Wilson Inc., Laconia, Liverpool, 73 coils; Banco Coml Italiane Trust Co., American Trader, London, 45 coils; T. D. Downing & Co., American Trader, London, 106 coils; ——, Quaker City, Leith, 176 coils.

CHINA CLAY

English China Clay Sales Corp., Sonya, Fowey, 302 rons, 4 cwt china clay; English China Clay Sales Corp., Sonya, Fowey, 140 bags china clay.

WOOD PULP

International Paper Co., Humberarm, Corner Brook, 54 rolls woodpulp; Irving Trust Co., Bergensfjord, Drammen, 4,800 bls. sulphite; Chemical Bank Trust Co., Bergensfjord, Oslo, 350 bls. sulphite; Atlantic Forwarding Co., Leerdam, Rotterdam, 50 bls. woodpulp; J. Manheimer, Leerdam, Rotterdam, 60 bls. woodpulp; Castle & Overton, Inc., Leerdam, Rotterdam, 1,449 bls. woodpulp; Irving Trust Co., Augsburg, Bremen, 600 bls. mechanical pulp; Castle & Overton, Inc., New York, Hamburg, 1,672 bls. woodpulp, 334 tons; Lagerloef Trading Co., Scanstates, Helsingfors, 568 bls. mechanical pulp, 101 tons.

WOOD PULP BOARDS

Johaneson Wales & Sparre, Inc., Scanstates, Wiborg, 539 rolls, 115 tons; Lagerloef Trading Co., Pr. Harding, Hamburg, 61 bls, 9 tons.

WOOD PULP BOARDS

——, Bergensfjord, Oslo, 80 bls.

BOSTON IMPORTS

WEEK ENDING AUGUST 5, 1933

Brown Bros. Harriman & Co., Laconia, Liverpool, 30 bls. card waste; Oxford University Press, Laconia, Liverpool, 9 cs. printing paper; F. S. Webster Co., Laconia, Liverpool, 8 cs. tissue paper; G. F. Malcolm Inc., Laconia, Liverpool, 12 cs. tissue paper; H. O. Houghton Co., American Trader, London; 19 cs. printing paper; G. M. Graves Co., American Trader, London, 52 bls. rags; Crocker Burbank Co., American Trader, London, 85 bls. waste paper; ——, City of Flint, Liverpool, 165 bls. hide cuttings; ——, City of Flint, Liverpool, 66 bls. new cuttings; ——, City of Flint, Liverpool, 104 bls. rags; ——, City of Flint, Liverpool, 25 coils old rope; E. Butterworth & Co. Inc., City of Flint, Manchester, 214 bls. rags; E. Butterworth & Co. Inc., City of Flint, Manchester, 133 bags hide cuttings; E. Butterworth & Co. Inc., City of Flint, Manchester, 57 bls. new cuttings; Leigh Textile Co., City of Flint, Manchester, 40 bls. cotton waste; A. W. Fenton, Inc., Cameronia, Glasgow, 86 bls. rags; Tupman & Thurlow Co. Inc., Capillo, B. Ayres, 834 bags casein, 110,325 lbs.; American British Chemical Supplies, Capillo, B. Ayres, 834 bags casein, 110,325 lbs.; E. J. Keller Co. Inc., Quaker City, ——, 339 bls wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING AUGUST 5, 1933

English China Clays Sales Corp., Sonya, Fowey, 1,081 tons, 8 cwt china clay; English China Clays Sales Corp., Sonya, Fowey, 667 bags china clay, 50 tons; Moore & Munger, Sonya, Fowey, 1,068 tons china clay; A. W. Fenton, Inc., City of Flint, Liverpool, 60 bls. paper stock; ——, City of Flint, Liverpool, 17 bls. paper stock; Castle & Overton, Inc., City of Flint, Manchester, 46 bls. rags; J. Lang Paper Co., City of Flint, Manchester, 168 bls. rags; Pacific National Bank, Quaker City, Hamburg, 499 bags casein, 30,106 kilos; 1st Natl Bank of Boston, Quaker City, Hamburg, 345 bls. wood pulp, 52 tons; Castle & Overton, Inc., Quaker City, Hamburg, 144 bls. rags; F. Stern, Quaker City, Bremen, 97 bls. rags; A. Brown & Sons, Quaker City, London, 9 bls. rags; ——, Quaker City, Leith, 460 bls. rags; —— Quaker City, Leith, 118 bls. rags; ——, Quaker City, Dundee, 121 bls paper stock; Perkins Goodwin & Co., Augsburg, Bremen, 339 rolls news print; J. Lang Paper Co., Scanstates, Stettin, 289 bls. rags; ——, Scanstates, Stettin, 283 bls. rags; Paper Manufacturers Co., Scanstates Kotka 63 rolls news print; J. W. Hampton Jr., Scanstates, Kotka, 89 rolls news print; Castle & Overton, Inc., Scanstates, Wiborg, 515 bls. wood pulp, 102 tons; Lagerloef Trading Co., Scanstates, Wiborg, 5,994 bls. sulphite, 1,140 tons; E. Mayer, Estrella, Marseilles, 33 bls. rags; Trust Co. of North America, Estrella, Marseilles, 445 bls. rags; E. J. Keller Co. Inc., Scanpenn, ——, 354 bls. wood pulp, 54 tons.

BALTIMORE IMPORTS

WEEK ENDING AUGUST 5, 1933

——, City of Flint, Liverpool, 254 coils old rope; E. Butterworth & Co. Inc., City of Flint, Manchester, 77 bls. bagging; G. A. Henshaw, City of Flint, Manchester, 66 bls. waste paper; W. H. Masson, Quaker City, Leith, 60 bls. waste paper; National City Bank, Quaker City, Leith, 115 bls. bagging; ——, Quaker City, London, 105 coils old rope; ——, Quaker City, London, 200 bls. waste paper.

NORFOLK IMPORTS

WEEK ENDING AUGUST 5, 1933

E. Butterworth & Co. Inc., City of Flint, Manchester, 76 bls. bagging; Chase National Bank, Exermont, Barcelona, 235 bls. bagging.

HOUSTON IMPORTS

WEEK ENDING AUGUST 5, 1933

Bank of Montreal, Humberarm, Corner Brook, 3,342 rolls news print; International Paper Sales Co., Humberarm, Dalhousie, 1,768 rolls news print.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, August 9, 1933.

Sentiment in the local paper market continues optimistic. Both manufacturers and merchants are complying with the President's wishes by increasing wages and salaries and shortening working hours, and the outlook for the future is considered bright. Prices continue steady to firm.

The news print paper market is displaying a slightly stronger undertone. Production in the United States, Canada and Newfoundland is being maintained in sufficient volume to take care of current requirements. Accumulations at the mills are not excessive. The price situation continues unchanged.

Paper board manufacturing operations are proceeding at near capacity. Demand for the various grades of box board is persistent. Prices continue firm. The fine paper market is more buoyant. Tissues are moving in good volume. The coarse paper market is exhibiting strength and quotations are holding up well.

Mechanical Pulp

The ground wood pulp market is decidedly firmer. No. 1 moist imported mechanical pulp is now quoted at from $24 to $28 per ton, and dry at from $26 to $28 per ton, on dock, Atlantic ports. No. 1 domestic and Canadian ground wood pulp is offered at from $24 to $28 per ton, f.o.b. pulp mill.

Chemical Pulp

Further advances were recorded in the chemical pulp market. Imported bleached sulphite is now quoted at from $2.70 to $3.00; Easy bleaching at from $1.95 to $2.10; No. 1 strong unbleached at from $1.90 to $2.00; Mitcherlich unbleached at from $1.95 to $2.00; and bleached sulphate at from $2.75 to $3.25, all on dock, Atlantic ports.

Old Rope and Bagging

The old rope market is somewhat quieter, although still firm. Offerings of imported and domestic old manila rope are rather scarce. Small mixed rope is dull. The bagging market is only moderately active. Quotations on gunny and scrap bagging are irregular. Roofing bagging is moving slowly.

Rags

No radical changes have transpired in the domestic rag market during the past week. New cotton rags continue steady to firm. Demand for No. 1 white shirt cuttings is well sustained. Roofing grades are slightly easier. The imported rag market is affected to some extent by the foreign exchange situation.

Waste Paper

Board mill demand for the lower grades of paper stock continues active. Strictly folded news and No. 1 mixed paper are firm, with offerings limited. The better grades of waste paper are steady. Book stock is in excellent request. Soft and hard white shavings are sharing the general improvement.

Twine

Conditions in the local twine market are satisfactory. Demand for the various grades is quite brisk for the time of year. Competition for extra desirable orders is not as intense as heretofore and quotations are more stable than for some months past.

SUBSTITUTION IN BOARD CODE

(Continued from page 25)

the requirements of such Agreement, as amended by the inclusion of the above paragraph taken from such Code of Fair Competition as submitted and substituted in accordance with this consent.

When an employer signs the Certificate of Compliance with the additional note thereon as above, he should bear in mind that the President's Agreement ceases upon formal approval, after public hearing, of the entire Code for the Paperboard Manufacturing Industry and he should also understand that the provisions substituted, as the same may appear in the formal Code of Fair Competition may vary from their form as above quoted.

It has been repeatedly announced that there will be no blanket exceptions to the President's Agreement. But when an industry has submitted a code of fair competition, Section 13 of the President's Re-employment Agreement authorizes the Administrator to accept provisions of the Code as a sufficient compliance with the Agreement for the period between the date of submission of the Code and final action thereon by the President. But it must be clearly understood that such an exception does not, in the slightest degree, obligate the Administrator to approve such provisions on final hearing. In each case in which such modification is permitted, the hearing will be called for at as early a date as possible and the code in the final form, when approved by the President will supersede the Agreement.

After the President's Agreement, as amended by such substitution, has been signed by any employer in such Industry, the requirements of the Certificate of Compliance will be met by signing the standard form and adding thereto the note:

"To the extent of N.R.A. consent as announced we have complied with the President's Agreement by complying with the substituted provisions of the Code submitted for the Paperboard Manufacturing Industry."

After the date hereof, the Certificate of Compliance signed by employers in such Industry with the additional note above mentioned will entitle them to National Recovery Administration Insignia.

Cigarette Paper from Spain

An error was made in reporting exports of cigarette paper from Spain during the first four months of this year in the PAPER TRADE JOURNAL of July 27. The correct figures are: Shipments of rolls and large sheets, 1,273,403 pounds; packets, 261,247 pounds; and exports to the United States, 88,444 pounds.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, August 9, 1933.

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Prices are holding to schedule. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk; while the powder is selling at from 3 to 3½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Demand for bleaching powder is mainly along routine lines. The contract movement is seasonal. Prices are generally holding to previously quoted levels. Bleaching powder is quoted at from $1.75 to $2.00 per 100 pounds, in drums, at works.

CASEIN.—The case market continues firm. Domestic standard ground is quoted at 15 cents and finely ground at 16 cents per pound. Argentine standard ground is selling at 14¾ and finely ground at 15¾ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Steadiness prevails in the caustic soda market. Contract shipments are moving in good volume. Solid caustic soda is quoted at from $2.55 to $3.00; while the flake and the ground are selling at from $2.95 to $3.00 per 100 pounds, in large drums, at works.

CHINA CLAY.—No radical changes transpired in the china clay market. The contract movement is well up to average. Imported china clay is quoted at from $12 to $17 per ton, ship side; while domestic paper making clay is selling at from $4.50 to $12.00 per ton, at mine.

CHLORINE.—The chlorine market is exhibiting a strong undertone. Shipments against contract are going forward at a steady pace. Prices are holding up well. Chlorine is still quoted at $1.75 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market is irregular. The grades of gum rosin used in the paper mills are now quoted at from $4.90 to $4.95 per 280 pounds, in barrels, at works; while wood rosin is selling at $4.20 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Trading in the salt cake market is moderately active. Prices continue firm. Salt cake is quoted at from $14 to $14.50; chrome salt cake at from $13.50 to $14 per ton, at works; while imported salt cake is selling at from $14 to $14.50 per ton, on dock.

SODA ASH.—The soda ash market continues to display strength. Demand from the paper mills is well sustained. Prices are holding to schedule. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.05; in bags, $1.30; and in barrels, $1.43.

STARCH.—Business in the starch market is holding up well. Supplies are going forward in fairly heavy volume for the time of year. Prices remain unchanged. Special paper making starch is quoted at $2.84 per 100 pounds, in bags; and at $3.11 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Paper mill demand for sulphate of alumina is excellent. The contract movement is normal. Prices are steady. Commercial grades are quoted at from $1.25 to $1.46; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market is firm. Sulphur is still quoted at $18 per long ton, on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—While the talc market is rather quiet, quotations remain firm. The contract movement is fairly regular. Domestic talc is quoted at from $16 to $18 per ton, in bulk, at eastern mines; while imported talc is selling at from $20 to $50 per ton, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	6.50	@	—
Bonds	6.00	@	—
Index	6.00	@	—
Cuttings—			
Extra Superfine	6.50	@	—
Superfine	6.25	@	—
Tub sized	4.50	@	7.00
Engine sized	4.00	@	5.00
Book, Cased—			
S. & S. C.	4.50	@	5.25
M. F.	4.35	@	4.85
Coated and Enamel	5.25	@	9.50
Lithograph	5.10	@	9.50
Tissues—Per Ream—			
White No. 1	.60	@	.80
White No. 2	.55	@	.70
Anti-Tarnish M. G. only	.75	@	.80
Colored	.80	@	1.00
Kraft	.75	@	.80
Manila	.65	@	.70
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Butchers	3.37½	@	—
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75
Common Bogus	1.50	@	3.00
Screenings	2.00	@	3.00
Card Middles	4.00	@	5.00
Glassine—			
Bleached basis 25 lbs., No. 1	.11	@	—
No. 2	.10	@	—
Bleached, basis 20 lbs.	.13	@	—

(Delivered New York)

News, per ton—			
Roll, contract	40.00	@	—
Rolls, spot	40.00	@	—
Sheets	45.00	@	—
Side Runs	25.00	@	—
Kraft—			
No. 1 Domestic	4.75	@	5.00
No. 2 Domestic	3.62½	@	4.00
Southern	3.62½	@	4.00
Imported	Nominal		
Boards—per ton—			
News	42.50	@	45.00
Straw	37.50	@	40.00
Chip	40.00	@	42.50
Binders Boards	62.00	@	70.00
Kraft Liner	52.50	@	55.00
Standard 85 Test Jute Liner	35.00	@	37.50
Sgl. Mla. Lt. Chip	50.00	@	52.50

(F. o. b. Mill)

Wood Pulp Board	70.00	@	80.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	24.00	@	28.00
Dry	26.00	@	28.00

(F.o.b. Mill)

No. 1 Domestic and Canadian	24.00	@	28.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—			
Bleached	2.70	@	3.00
Easy Bleaching	1.95	@	2.10
No. 1 strong unbleached	1.90	@	2.00
Mitscherlich Unbleached	1.95	@	2.00
No. 2 Strong unbleached	1.75	@	1.85
No. 1 Kraft	1.75	@	1.85
No. 2 Kraft	1.60	@	1.70
Sulphite—			
Bleached	2.75	@	3.25

(F. o. b. Pulp Mill)

Sulphite (Domestic and Canadian)—			
Bleached	2.50	@	3.00
Easy Bleaching	1.80	@	1.90
News	1.70	@	1.80
Mitscherlich unbleached	2.25	@	2.50
Kraft (Domestic)	1.60	@	2.75
Soda Bleached	2.50	@	—

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	5.75	@	6.25
Silesias No. 1	4.00	@	4.50
New Unbleached	6.75	@	7.25
New Soft Blacks	3.00	@	3.25
Blue Overall	4.25	@	4.50
Fancy	2.00	@	2.25
Washables	1.75	@	2.00
Mixed Khaki Cuttings	2.50	@	2.75
O. D. Khaki Cuttings	3.13	@	3.38
Men's Corduroy	1.50	@	1.75
New Mixed Blacks	2.50	@	2.75

Old Rags

White, No. 1—			
Repacked	3.75	@	4.00
Miscellaneous	3.00	@	3.50
White, No. 2—			
Repacked	2.00	@	2.50
Miscellaneous	1.75	@	2.00
Thirds and Blues—			
Repacked	1.75	@	2.00
Miscellaneous	1.50	@	1.75
Black Stockings	2.50	@	3.00
Roofing Rags—			
No. 1	.90	@	.95
No. 2	.80	@	.85
No. 3	.75	@	.80
No. 4	.70	@	.75
No. 5A	.65	@	.70

Foreign Rags

New Rags

New Dark Cuttings	1.50	@	1.60
New Mixed Cuttings	1.60	@	1.70
New Light Silesias	3.50	@	3.75
Light Flannelettes	3.25	@	3.50
Unbleached Cuttings	5.50	@	5.75
New White Cuttings	5.00	@	5.50
New Light Oxfords	3.25	@	3.50
New Light Prints	2.75	@	3.00

Old Rags

No. 1 White Linens	6.25	@	6.75
No. 2 White Linens	5.25	@	5.75
No. 3 White Linens	4.25	@	4.00
No. 4 White Linens	2.00	@	2.25
No. 1 White Cotton	3.75	@	4.00
No. 2 White Cotton	3.00	@	3.25
No. 3 White Cotton	2.50	@	2.75
No. 4 White Cotton	1.50	@	1.60
Extra Light Prints	2.00	@	2.25
Ord. Light Prints	1.75	@	1.85
Med. Light Prints	1.55	@	1.65
Dutch Blue Cottons	1.65	@	1.80
French Blue Linens	2.10	@	2.25
German Blue Linens	1.85	@	2.00
German Blue Cottons	1.35	@	1.50
Checks and Blues	1.30	@	1.40
Lindsay Garments	1.10	@	1.15
Dark Cottons	.95	@	1.00
Old Shopperies	.85	@	.90
New Shopperies	.80	@	.85
French Blues	1.50	@	1.65

Old Rope and Bagging

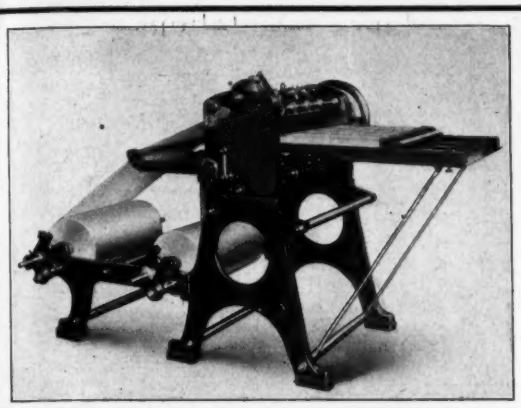
(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	1.30	@	1.40
Domestic	1.25	@	1.35
Wool Tares, light	1.05	@	1.15
Wool Tares, heavy	1.05	@	1.15
Bright Bagging	1.00	@	1.10
Manila Rope—			
Foreign	2.75	@	3.00
Domestic	2.50	@	2.75
Small Mixed Rope	1.00	@	1.25
New Burlap Cut	1.50	@	1.75
Hessian Jute Threads—			
Foreign	2.60	@	2.75
Domestic	2.80	@	3.00

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.65	@	2.85
Ordinary Hard White No. 1	2.40	@	2.50
Hard White No. 2	2.30	@	2.40
Soft White No. 1	2.20	@	2.30
Flat Stock—			
Stitchless	1.05	@	1.15
Overissue Mag	1.05	@	1.15
Solid Flat Book	.95	@	1.05
Crumpled No. 1	.85	@	.90
Solid Book Ledger	1.50	@	1.75
Ledger Stock	1.05	@	1.15
New B. B. Chips	.65	@	.70
Manilas—			
New Env. Cut	1.60	@	1.70
New Cuttings	1.20	@	1.25
Extra No. 1 old	.90	@	1.00
Print	Nominal		
Bogus Wrapper	.70	@	.80
Container	Nominal		
Old Kraft Machine—			
Compressed bales	1.20	@	1.30
News—			
No. 1 White News	1.20	@	1.30
Strictly Overissue	.75	@	.85
Strictly Folded	.80	@	.85
No. 1 Mixed Paper	.80	@	.85



"SPOERL" DISTRIBUTOR

For Interfolding Toilet Paper

Latest construction delivering finished packages without stoppage.

"Spoerl Paper Napkin Machine". High speed high class work, simplified handling. This machine embodies several new features.

Toilet paper slitting, rewinding and labeling machine.

PADGETT & RICHMAN

Selling Agents

100 Hudson Street New York, N. Y.

Dietz Towel Interfolding Machines
also

TOILET PAPER MACHINES

For making Toilet and Paper Towel Rolls
(With or without perforations)

AUTOMATIC TUBE MACHINES

For Making Wire-Stitched Toilet Tubes

Sanitary Crepe Towel Machines, Roll Tighteners, Slitting and Rewinding Machines, Drop Roll Slitting Machines, Photo Mount Beveling Machines, Rotary Card Cutting Machines, etc.
Correspondence solicited

DIETZ MACHINE WORKS

126-128 W. Fontaine Street
Cor. Waterloo St. (between Front & Second Sts.)
and below Diamond St.
Phila., Penna., U. S. A.

CASEIN

CASEIN-CO — A BORDEN PRODUCT — BRAND

Uniform Quality Dependable Service

THE CASEIN MFG. COMPANY OF AMERICA, Inc.

205 E. 42nd St. New York, N. Y.

Oldest and Largest Producers of Casein in America

For Repair Rolls
At Lower Service Cost

use

Rodney Hunt "SHAF-TITE" Rolls

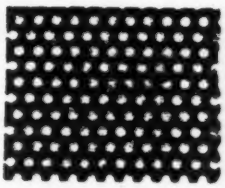
WOOD — METAL — RUBBER
Any Size, for all machines

RODNEY HUNT MACHINE COMPANY

63 Maple St. Orange, Mass.

Perforated Metal Screens

For Pulp and Paper Mills



STEEL, COPPER, BRASS, BRONZE, MONEL METAL and other Alloys punched for Centrifugal and Rotary Screens, Pulp Washers, Drainer Bottoms, Filter Plates, etc.

".065" Round

CHARLES MUNDT & SONS

63-65 FAIRMONT AVE. JERSEY CITY, N. J.

PERFECTION GUMMED PAPERS

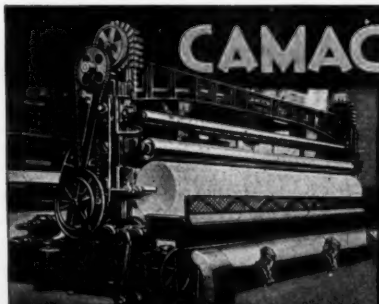
All that the Name Implies

"THEY ARE ABSOLUTELY FLAT"

ASK FOR SAMPLE BOOK
WITH COMPLETE DATA AND PRICES

PAPER MANUFACTURERS CO. INC
PHILADELPHIA, PA.

CAMACHINE 20



HIGH SPEED NEWSPRINT, BOOK AND KRAFT PAPER WINDER. WIDTHS 180" to 262". ROLL DIAMETERS UP TO 40" SPEEDS UP TO 3000 F.P.M.

NEW FEATURE FOR REVERSING WEB IN WINDING
CAMERON PATENTED METHOD WINDS ROLLS WIRE SIDE OUT IF REQUIRED

CAMERON MACHINE COMPANY 61 POPLAR ST. BROOKLYN, N.Y.

Twines
(F. o. b. Mill)

Cotton—			
B. C. 18 basis	.30	@	.32
No. 1	.20	@	.22
No. 2	.19	@	.20
No. 3	.17	@	.18
A. Italian, 18 basis	.36	@	.37
Finisaed Jute—			
Dark, 18 basis	.18	@	.20
Light, 18 basis	.20	@	.22
Jute Wrapping, 3-6 Ply—			
No. 1	.15½	@	.16½
No. 2	.15	@	.16
Tube Rope—			
4-ply and larger	.09¾	@	.11¾
Fine Tube Rope—			
4-ply	.13¼	@	.14¼
3-ply	.14¼	@	.14¾
2-ply	.15¼	@	.15¾
Paper Makers Twine	.08¾	@	.10¼
Box Twine, 2-3 ply	.12¼	@	.13½
White Hemp	.12¼	@	.15¼
Java Sisal—			
No. 1 Basis	.11½	@	—
No. 2 Basis	.10½	@	—
New Zealand Sisal	.11½	@	—
Sisal Lath Yarn—			
No. 1	.13½	@	.15½
No. 2	.11½	@	.13½
Manila Twine	.24½	@	.29½

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.04	@	.11
Superfine Writing	.18	@	.24
No. 1 Fine Writing	.14	@	.18
No. 2 Fine Writing	.12	@	.14
No. 3 Fine Writing	.07	@	.18
No. 1 M. F. Book	.06½	@	.07¾
No. 2 M. F. Book	.05¾	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¾	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¾	@	.03¾
No. 1 Kraft	3.50	@	4.50
Southern Kraft	2.62½	@	—
No. 2 Kraft	2.62½	@	—
Wood Tag Boards	.04¾	@	.06¾
Sulphite Screenings	.03	@	.03¾
Manila Tissue	.07	@	.07½
White Tissue	.07¼	@	.07½

(Delivered Central Territory)

News, per ton—			
Rolls, contract	45.00	@	—
Sheets	50.00	@	—
Boards, per ton—			
Plain Chip	37.50	@	—
Solid News	43.50	@	—
Manila Lined Chip	47.50	@	—
Patent coated	55.00	@	—
Container Lined—			
85 Test	60.00	@	65.00
100 Test	60.00	@	70.00

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope cuttings	1.70	@	1.80
No. 1 Hard White	1.40	@	1.50
No. 1 Soft White	1.20	@	1.30
Ledger & Writings	.80	@	.90
Solid Books	.80	@	.90
Blanks	1.00	@	1.05
Krafts	.90	@	1.00
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	1.00	@	1.05
Print Manila	.60	@	.65
Overissue News	.60	@	.70
Old Newspapers—			
No. 1	.55	@	.65
Mixed Papers—			
No. 1	.50	@	.55
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.04	@	.40
Ledgers	.06	@	.40
Writings—			
Superfine	.10	@	.18
Extra Fine	.15	@	.26
Fine	.15	@	.26
Fine, No. 2	.10	@	.25
Fine No. 3	.05½	@	.18
Book, M. F.	.04¼	@	.07
Book, S. S. & C.	.05	@	.07½
Book, Coated	.06	@	.16
Coated Lithograph	.06	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.06	@	.10
Manila Sul., No. 1	.03	@	.06
Manila No. 2	.03	@	.05
No. 1 Kraft	.05¼	@	.06½
No. 2 Kraft	.03¾	@	.05
Southern Kraft	2.75	@	4.00
Common Bogus	.03	@	.04½

(Delivered Philadelphia)

News Print Rolls	46.00	@	55.00
Straw Board	40.00	@	45.00
News Board	37.00	@	45.00
Chip Board	40.00	@	45.00
Wood Pulp Board	70.00	@	85.00
Binder Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.03½	@	.04
New White, No. 2	.02½	@	.04
Light Silesias	.02½	@	.03
Silesias, No. 1	.03	@	.03½
Black Silesias, soft	.02½	@	.03
New Unbleached	.05	@	.05½
Washable, No. 1	.01½	@	.02
Blue Overall	.03½	@	.04
Cottons—According to grades—			
Washable, No. 2	.02½	@	.03
New Blue	.01½	@	.03
Fancy	.01½	@	.03
New Black Soft	.02	@	.04
New Light Seconds	.01½	@	.03
New Dark Seconds	1.50	@	1.75
Khaki Cuttings—			
No. 1 O.D.	.03	@	.04
No. 2 Mixed	.03	@	.04
Corduroy	.02	@	.03
New Canvas	.03½	@	.04½
New Black Mixed	.02½	@	.03½

Domestic Rags (Old)

White No. 1—			
Repacked	2.50	@	3.50
Miscellaneous	1.75	@	2.25
M. G.	3.00	@	3.75
Thirds and Blues—			
Miscellaneous	1.00	@	1.50
Repacked	1.50	@	2.00
Black Stockings (Export)	2.00	@	3.50
Roofing Stock—			
Foreign No. 1	.50	@	.75
Repacked	.70	@	.85

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.25	@	1.50
Domestic	1.50	@	1.75
Manila Rope	2.00	@	2.25
Sisal Rope	1.25	@	1.50
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	1.25	@	1.50
No. 2	.80	@	1.00
Wool Tares, heavy	2.75	@	—
Mixed Strings	1.15	@	1.25
No. 1 New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.30	@	2.40
No. 2 Hard White	2.10	@	2.15
No. 1 Soft White	2.00	@	2.10
No. 2 Soft White	1.15	@	1.25
No. 1 Mixed	.95	@	1.00
No. 2 Mixed	.75	@	.80
Solid Ledger Stock	1.50	@	1.60
Writing Paper	1.20	@	1.25
No. 1 Books, heavy	1.20	@	1.25
No. 2 Books, light	.90	@	1.00
No. 1 New Manila	1.65	@	1.75
No. 1 Old Manila	.95	@	1.00
Print Manila	.90	@	.95
Container Manila	.85	@	.90
Old Kraft	1.20	@	1.25
Common Paper	.65	@	.70
No. 1 Mixed Paper	.75	@	.80
Straw Board Chip	.70	@	.75
Binders Board Chip	.70	@	.75
Corrugated Board	.90	@	.95
Overissue News	.75	@	.80
Old Newspaper	.75	@	.80

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.06	@	.12½
Rag Content	.12	@	.30
All Rag	.36	@	.52½
Bonds—			
Sulphite	.06	@	.11½
Rag Content	.12	@	.30
All Rag	.36	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.06	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06¾
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04½	@	—
No. 2 Kraft	.03½	@	—

(F. o. b. Boston)

Southern Kraft	.03¾	@	—

(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)

Common Bogus	.02	@	.02¼

(Delivered New England points)

News Print, rolls	44.50	@	—
Straw Board, rolls	.009	@	35.00
Straw Board in Sheets, basis 35s to 70s	—	@	40.00
Filled News Board	42.50	@	47.50
Chip Board	40.00	@	45.00
Chip Board (Creasing)	—	@	42.50
Single Manila Lined Chip	50.00	@	60.00
Single White, Patent Coated News Board—Bender	60.00	@	70.00
Wood Pulp Board	70.00	@	75.00
Binder Boards	62.00	@	75.00

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Soft White	1.90	@	2.00
No. 1 Old Manila	.50	@	.60
No. 1 Mixed	.90	@	1.00
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.40	@	1.50
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.85	@	1.00
No. 1 Books, heavy	1.10	@	1.15
No. 1 Books, light	.80	@	1.00
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.25	@	1.30
No. 1 Old Manila	.90	@	1.00
White Blank News	1.20	@	1.30
No. 1 Kraft	1.10	@	1.20
Manila	.90	@	1.05
No. 1 Mixed Papers	.65	@	.67½
Print Manila	.80	@	.85
Overissue News	.80	@	.90
Old Newspapers	.72½	@	.77½
Box Board Chips	.55	@	.65
Corrugated Boxes	.62½	@	.85
Screening wrappers	.75	@	.85

Bagging
(F. o. b. Boston)

Manila Rope—			
Foreign	2.75	@	—
Domestic	2.50	@	—
Transmission Rope	1.50	@	—
Mixed Strings	.85	@	—
Jute Rope	1.00	@	1.15
Jute Carpet Threads	.65	@	.70
Gunny No. 1—			
Foreign	1.35	@	1.45
Domestic	1.25	@	—
Bleachery Burlap	3.00	@	3.25
Scrap Burlap	1.00	@	1.10
No. 1 Scrap Burlap	1.10	@	1.20
Scrap Sisal	.85	@	1.10
Scrap Sisal for shredding	1.10	@	—
Wool Tares, heavy	1.10	@	1.25
New Burlap Cutting	.95	@	1.00
Australian Wool Pouches	2.50	@	—
Heavy Baling Bagging	1.25	@	1.50
Paper Mill Bagging	.85	@	.95
Bagging No. 2	.50	@	.60
No. 1 Burlap	1.75	@	2.25

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.02	@	.02¼
New White No. 1	.05½	@	.06
New White No. 2	.04½	@	.05
Silesias No. 1	.04	@	—
New Black Silesias	.02½	@	.03
New Unbleached	.06	@	—
Fancy	.01½	@	.02½
Washable	.02¼	@	—
Cottons—According to grades—			
Blue Overalls	—	@	.03¼
New Black, soft	.04	@	.04
Khaki Cuttings	.03	@	.03½
O. D. Khaki	.03	@	.03½
Corduroy	.01¼	@	.02
New Canvas	—	@	.05
B.V.D. Cuttings	.04	@	.04¼

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.00	@	—
White No. 2—			
Repacked	.01½	@	.01¾
Miscellaneous	.01½	@	.01¾
Twos and Blues	1.25	@	1.50
Thirds and Blues			
Repacked	1.10	@	1.25
Miscellaneous	.85	@	.90
Black Stockings	2.25	@	2.50
Roofing Stock—			
No. 1	.80	@	.85
No. 2	.70	@	.75
No. 3	.55	@	.60

Foreign Rags
(F. o. b. Boston)

Dark Cottons	.85	@	.90
New White Shirt Cuttings	6.00	@	6.50
Dutch Blues	2.00	@	2.50
New Checks & Blues	2.50	@	3.00
Old Fustians	1.25	@	1.55
Old Linsey Garments	1.05	@	1.25

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.09¾	@	—
No. 2 Sulphite	.08	@	—
No. 1 Colored	.10¼	@	—
No. 2 Colored	.08½	@	.10¼
Ledgers (sulphite)			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F. (Carloads)	6.20	@	—
No. 3 M. F. (Carloads)	5.70	@	—
No. 4 M. F. (carloads)	4.75	@	—
No. 1 S. C. (carloads)	6.65	@	—
No. 3 S. C. (carloads)	6.20	@	—
No. 4 S. C. (carloads)	5.20	@	—
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	14.00	@	—
Wrapping—			
Rag Brown	4.25	@	—
White Wrap	2.00	@	—
"B" Manila	4.75	@	—
No. 1 Manila	5.25	@	—
Fiber	5.25	@	—
Kraft, M. F.	5.75	@	—
Kraft No. 2	5.25	@	—

(F.O.B. Cars Toronto)

News, per ton—			
Rolls (contract)	45.50	@	—
Sheets	50.50	@	—

Pulp
(F. o. b. Mill)

Ground Wood	18.00	@	20.00
Sulphite easy bleaching	40.00	@	—
Sulphite, news grade	38.00	@	—
Sulphite, bleached	45.00	@	50.00
Sulphate	50.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	1.80	@	2.00
Soft White	1.40	@	1.80
White Blk. News	1.25	@	1.50
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	1.00
Light and Crumpled Book Stock	.80	@	.90
Ledgers and Writings	1.00	@	1.05
Manilas—			
New Manila Cut	1.25	@	1.50
Printed Manilas	.55	@	.80
Kraft	1.25	@	1.50
News and Scrap—			
Strictly Overissue	.90	@	—
Strictly Folded	.60	@	—
No. 1 Mixed Paper	.55	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.04¼	@	.04¾
Fancy Shirt Cuttings	.02¼	@	.02½